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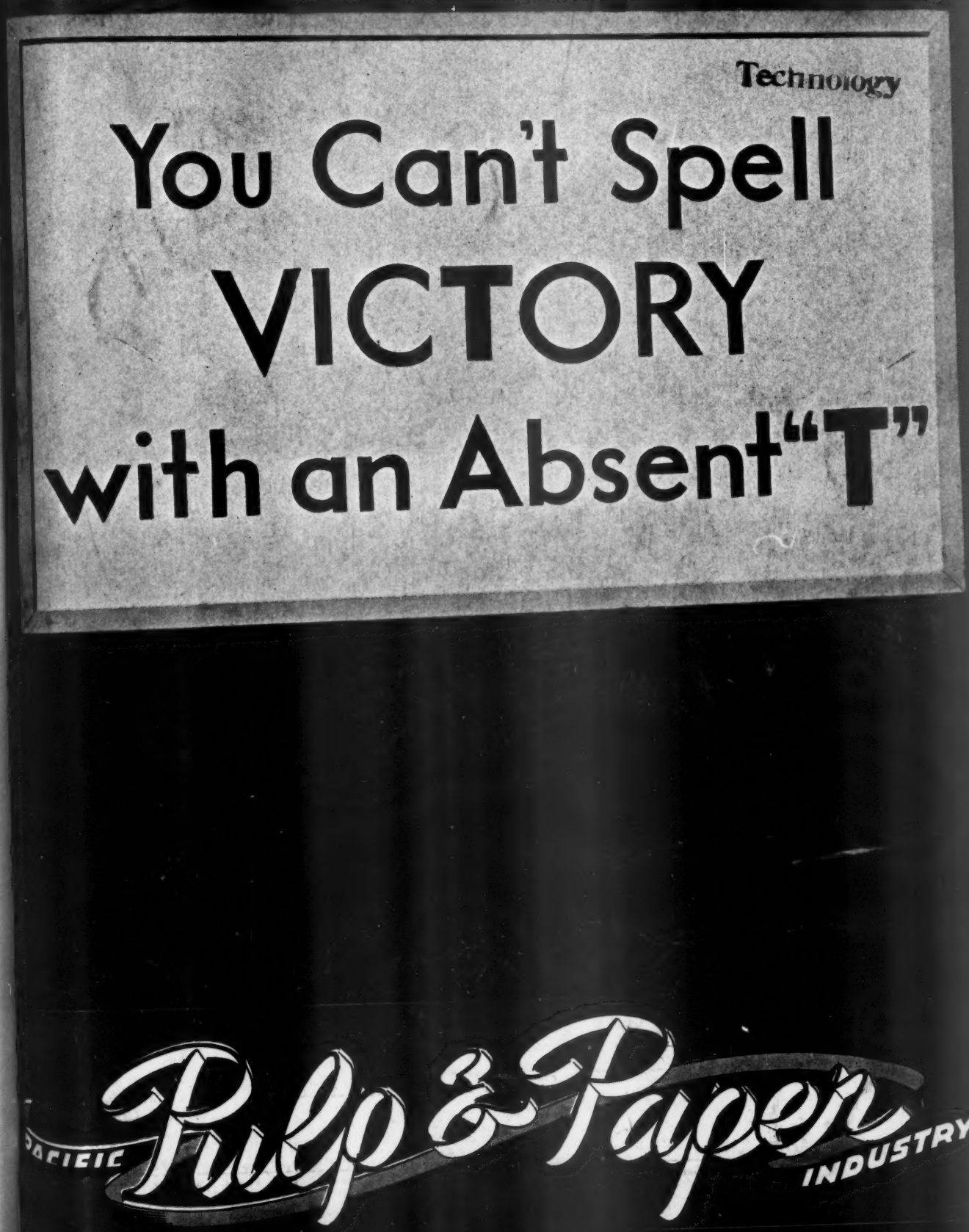

To be permitted to unfurl an Army-Navy "E" in token of a production job well done is a signal honor and every member of the Shartle organization is deeply appreciative. May it serve as an ever present reminder of the heavy task still before us and spur us on to redoubled efforts.

Shartle Bros. Machine Co., Middletown, Ohio

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Let's Lick the Axis FIRST

(An Editorial)

"YOU Can't Spell Victory with an Absent 'T'," says the mill signboard reproduced on the cover.*

And to a nation fighting for its very existence one of the most intolerable forms of absenteeism is that which arises from jurisdictional disputes between labor unions.

Such a work stoppage shut down the Hoquiam, Wash., division of Rayonier Incorporated from April 3 to April 13.

The 600 employes of that mill, with few exceptions if any, are unquestionably loyal Americans. Perhaps the absenteeism of many of them was involuntary.

But that's a side issue.

The important thing to the future of the United States is what kind of thinking went on in the minds of those employes who responded to the call of the Woodworkers of America and CIO leaders to close down the plant.

What about the production of nitrating wood pulp, the raw material of smokeless gunpowder, which our fighters MUST have to defend their lives against the enemy?

What about the production of rayon pulp that goes into the clothing to keep our fighters warm and into the tires that keep our war machines a-rolling?

What comes FIRST today? Whether we win over the Axis? Or whether the CIO wins over the AFL?

Management and labor both have had to temporarily surrender certain rights and privileges in order that this war may be waged with the greatest efficiency and brought to the quickest possible conclusion with the least possible blood-letting.

We often hear the principle expounded that no one should take advantage of the war to permanently destroy any of labor's hard-won rights. If this is sound, isn't it just as reasonable to assume that any labor union should not take advantage of the war to enhance its domain at the expense of another?

Here is an unbiased press account of what happened in Hoquiam:

Ten employes who had joined local 362, Pulp and Papermakers, an affiliate of the IWA and CIO, were formally expelled from the International Brotherhood of Pulp and Sulphite Workers, an AFL union to which they had belonged. They were employed at the Hoquiam plant.

Under the terms of the uniform labor agreement between the AFL and the Pacific Coast Association of Pulp and Paper Manufacturers, the AFL union vice president, John Sherman, demanded that they be dismissed from their positions in the plant. Under the agreement, the management was required to dismiss expelled union members.

When it did so, the CIO union charged the ten men were "locked out" and it threw a picket line around the plant. It is interesting to observe that the CIO leaders also contended that the AFL - management agreement was nullified by the President's executive order 9240 eliminating payment of certain overtime requirements of the contract, such as Sunday overtime.

But this, it appears to us, is a side issue. It also seems to us that the question of whether the CIO has been able to sign up tens or hundreds of employes in the Hoquiam mill is also a side issue.

But the fact that production of precious nitrating and rayon pulp was STOPPED is not a side issue.

It might have been hoped that the government could have acted more energetically to end this cessation of work. A federal mediator went to Hoquiam for a few days. The CIO flatly turned down his offer to reopen the plant without the ten discharged men while carrying on negotiations. He went to Portland to wait for days while his reports were being tangled up in red tape in Washington.

Finally the chairman of the Regional War Labor Board stepped into the picture. An agreement between the AFL and the Regional War Labor Board was reached whereby the ten CIO men returned to work on a work permit basis pending a decision by the Board on the dispute.

In other words, the ten-day shutdown didn't settle anything. The labor union quarrel is still to be

*The cover photograph is of a signboard at the joint entranceway of the pulp mill and lumber mill of the Weyerhaeuser Timber Company in Longview, Wash. It was given to the Weyerhaeuser firm by the Hyatt Roller Bearing Company.

settled. All the shutdown did was to retard essential war production.

Labor leaders themselves should be the first to regret that they are held up to public criticism by this type of interference with the war effort.

Did the promises made only recently by the national AFL and CIO leaders not to raid each other, mean anything? Or was it just "publicity" and "politics"?

We understood that for the duration, while we train our sights on the enemy, the labor situation was to remain in status quo. In a status quo, how can labor lose anything? The only ones who gain by upsetting the status quo are Hitler and Tojo.

A ten-year record of steady work with no stoppages due to labor trouble had established an enviable reputation for management and labor in the Pacific Coast pulp and paper industry up to April 3. The Hoquiam incident was the first time that a labor dispute ever shut down a Pacific Coast pulp or paper mill in the association since the uniform labor agreement went into effect ten years ago. A similar dispute that arose in Everett some years ago—in peace time, mark you—did not halt work.

Let us hope there will be no more black marks on a fine record of collective bargaining relations—at least until the unconditional surrender of our enemies.

* * *

● Most absenteeism in the pulp and paper industry of the Pacific Coast region is what is called the "involuntary" type, according to the informal reports made to this magazine by a number of representative operators.

But they also said much was due to abundance of money and jobs.

The "involuntary" type of absentee is the one who is kept away from work, unwillingly in most cases, by home duties, illness, etc. It is due mainly to the greatly increased enrollment of women in the industry. Since Pearl Harbor, an estimated 800 to 900 women have been added to the rolls in Pacific Coast mills, and this number is steadily increasing. This is over and above the hundreds of women previously employed, mostly in finishing rooms. The new women employes are doing heavier jobs, in the wood rooms, on grinders, etc.

One mill operator said he "guessed there was not much that could be done about this type of absenteeism." It threw a greater burden on men employes, he said, who were forced to work long hours to make up for the absentees.

However, it might be of interest to mill managers that a Portland shipyard saw fit to engage a physician to make a special study of the effect of various jobs in the yard on the health of women employes. This doctor found that strenuous stretching of their arms by some women in their work and the continuous close bodily contact of another woman with cold metal had an adverse affect on their health and bodily functions.

When this study was brought to the attention of one pulp mill personnel director, he observed that it might pay in the long run for the mills to make some kind of a study of the effects of their working conditions on women taking over men's jobs.

* * *

● One thing may be said definitely of absenteeism in the pulp and paper mills. Boredom is certainly not a cause. Most pulp and paper mill workers are skilled and semi-skilled. Most of them are interested in their jobs. Their promotions are frequent and numerous, much more so than in the temporarily wartime industries. They recognize this fact. And they recognize that they have a great future after this war. This helps to keep them on the job.

Quite a few mills report they have no absenteeism problem whatever. The operators said most absenteeism was among the least skilled and common labor.

* * *

● It was curious to find two west coast pulp and paper mill superintendents taking opposite views on the effect on absenteeism of Executive Order 9240, relating to overtime.

One said this tended to retard absenteeism, keeping the employes on the job so they could qualify for overtime. The order banned Saturday and Sunday overtime as such and required that seven days of work be completed continously to qualify for double time for the seventh day.

The other superintendent said the "smart" employe wouldn't miss getting that double pay occasionally but, after getting it, he often felt the need for a rest and would lay off.

* * *

● Absenteeism was reduced 22 per cent at the Kimberly-Clark Corporation's Lakeview paper mill at Neenah, Wis., by a drive conducted on a competitive basis between departments. The management reported that "independence" among employes because of the abundance of jobs available was the chief cause of absenteeism. Second in importance was fatigue due to longer work hours.

Everett Flood Promoted In Army

● Everett E. Flood, son of E. E. Flood, president of Pacific Paper Board Company, Longview, has recently received his silver bars as a first lieutenant in the United States Army Air Corps. He is stationed at Patterson field in the office of procurement. Mr. Flood is 23 and entered the army as a private in May of last year. He formerly was in the sales office of the company in Seattle.

Everett Men Meet In African War Zone

● Two employes on leave from the Everett, Wash., pulp division of the Weyerhaeuser Timber Company, have had an unexpected rendezvous in the battle zone of North Africa.

Lt. Arthur B. Hilmo, fighter polit who was shot down and slightly injured in a battle with the Nazis, wrote to Gerald F. Alcorn, Everett plant engineer, telling of "a pleasant surprise" when he met and talked for a few hours of old times with Capt. Martin Eugene Sorte, U. S. Army Air Corps engineering detail. Lt. Hilmo was a lab technician at the mill and Capt. Sorte, a draughtsman.

Enrollment of Women At West Linn Increases

● There are now forty women employed in the Crown Willamette Paper Company, division of Crown Zellerbach, plant at West Linn, Ore. These are all local women, mostly wives and relatives of employees on leave who have joined the armed services or of men who are now working in the plant.

Four women—the first ones to be given mill jobs at West Linn since the last World War—went to work February 1, wrapping, sealing and packaging paper. Now there are ten times as many of the fair sex employed and their jobs are in the finishing room, in clean-up work and on towel converting machines.

First Camas War Casualty

● The name of Robert C. Tracy will be placed on the honor roll at the Camas, Wash., plant of the Crown Zellerbach Corporation in gold letters on black. He is the first casualty of this war among the many former employees of this organization. He was killed in training as a flying cadet in an airplane crash.

Canadian Log Movement To Puget Sound May Be Delayed

Severe winter may force revision of Canadian Timber Controller's plans to ship hemlock and balsam pulpwood logs southward in spring ✓ ✓ ✓ Most Canadian logging camps running at slow bell even in April ✓ ✓ ✓ British Columbia mills even worse off than those across the line, it is claimed.

● British Columbia hemlock and balsam pulpwood logs are not likely to be moving to Puget Sound mills for some time yet, despite the assurances offered early in the year by Canadian Timber Controller A. H. Williamson when he visited the coast and addressed representatives of the forest industries in Vancouver.

At that time Mr. Williamson announced a modification of the previous policy which had resulted in total prohibition of all log exports—hemlock as well as Douglas fir, which is still on the banned list. Mr. Williamson said that, in the spirit of the Hyde Park agreement, Canada had undertaken to share its surplus raw materials with the United States, and that it could be expected that a reasonable amount of hemlock and balsam logs would be shipped to the United States this spring to meet the demands of Puget Sound pulp mills.

When Mr. Williamson made this statement, however, he had not foreseen the full effect of one of British Columbia's most severe winters in many years. Logging camps in the coastal section were shut down two months instead of the usual two or three weeks, and when they did close they had no large inventory for the mills, as is usually the case.

Even at the beginning of April most of the logging camps were running at slow bell, and the shortage of logs was so critical that all civilian utilization of lumber in British Columbia was prohibited; Powell River, biggest newsprint mill in the province, was operating on a greatly reduced schedule and forced to close down completely for two weeks, and obviously there were no logs for export.

At the end of March British Columbia's log production of all species in the coast district was 200,000,000 feet short of the record for the corresponding three months of 1942. The decline has been about 25 per cent since the beginning of the year and a factor interfering with hemlock export has been the increasing use of that species for aircraft manufacture. Aero Timber Products, organized as a Canadian government company to expedite production of spruce and hemlock on the Pacific coast for the airplane factories, has placed aero material at the head of the priority list, and production of peeler logs has also been encouraged.

B. C. Mills Need Logs, Too

● Assistant Timber Controller D. D. Rosenberry, discussing the general situation early in April, ventured no forecast as to when the log exports might be resumed. He indicated that production was down, largely because of manpower shortage as well as the effects of the hard winter, and it might be summer before hemlock moved across the border in considerable volume.

It was pointed out that pulp and paper mills in British Columbia are as badly off, if not worse off, than those in Washington so far as log supplies are concerned. When it was estimated by Mr. Williamson that Washington mills were down to 60 per cent capacity and British Columbia's at about 70 per cent, he neglected to take into account the fact that the Washington figure was based on a seven-day week whereas the British Columbia records are traditionally based on a six-day set-up. Actually, Powell River has been running lately at a little more than five days a week.

The new calculation shows that the British Columbia mills, as a whole, are producing at a lower percentage of capacity than most of the Washington mills, according to the Timber Control.

Efforts to obtain more men for the logging camps have so far been ineffective. About 5000 men are short, according to officials of the British Columbia Loggers Association, and the only way to build up the crews is to have men diverted back from war industries such as shipyards and aircraft factories or have ex-loggers in the armed forces sent back to the woods.

The Canadian government has cooperated to some extent by authorizing commanding officers of military units on the coast to grant three months' leave of absence to soldiers of previous experience in the logging industry so that they may return to the woods camps, but logging operators say that this is an empty gesture.

"How many men, regardless of their desire to go logging again, would upset all their plans for the sake of three months' temporary employment in the woods?" asked one logging boss. "Many of these ex-loggers now in the army have sold their clothing and equipment and would have to make a new investment. They would be paid a higher scale, but it would hardly compensate them for the danger of losing seniority in the army."

Shipyard workers who previously worked as loggers have been asked by the national selective service to return to logging if they so desire, but they are earning good money and would in many instances have to maintain two establishments if they went logging again and would thus be losing money.

So long as the system is purely voluntary, the logging operator's don't expect much improvement in the man-power situation.

Powell River Shuts Down Three Paper Machines

● Although already on a schedule of greatly reduced production, with only four machines out of a total battery of seven in operation on a 5 2/3 day week basis, Powell River Company, British Columbia's premier newsprint producer, ran completely out of logs April 1, and was forced to shut down for two days.

So far this year Powell River plant has been down for two seven-day periods in addition to the reduced daily basis. Three machines have been idle most of the year.

Use of Melamine Resins for Beater Wet Strength

by CHARLES S. MAXWELL*

This is the first publication of a paper which featured the national as well as several regional TAPPI meetings this year.

It was given at the national convention of TAPPI by Mr. Maxwell himself. At the Pacific Coast regional dinner meeting in Portland in March, it was presented by Ralph Kumler, technical service, paper division of the American Cyanamid & Chemical Corp.

A timely and important reason why this paper has achieved wide interest is the U. S. Navy's efforts to encourage development of paperboard packaging that will (1) resist deterioration in the ocean water when floated ashore from ships, (2) hold up in all kinds of climate and (3) withstand rough handling.

New efficiency in producing paper having high wet strength combined with enhanced dry strength and resistance to folding was achieved by American Cyanamid & Chemical Corporation with the development of a Melmac resin suitable for addition to paper pulp in the beater before the sheet is formed. This resin (Paper Resin 605) is added to the paper pulp in the form of an acid solution and is of such a nature that it is absorbed by the paper fibers. The treated pulp is made into a sheet in the customary manner on the normal paper making machine without requiring modification of either machine or operation.

● The property of "wet strength" in paper has been known for some time. It has been common knowledge that several materials, such as glue-formaldehyde and regenerated cellulose (viscose) give a toughening effect to paper, even when the paper is completely water saturated. In early practice it was customary to use tub applications of glue-formaldehyde to treat rosin-sized papers such as blueprint and writing grades, while the viscose processes were applicable to many grades of paper, either in tub or beater. However, the use of viscose was limited because of the toxicity of the fumes evolved, as well as the expense of removing the sulfur compounds.

The discovery that urea-formaldehyde resins could be used for this purpose gave new impetus to the wet strength treatment of paper. (The term "resin" is used loosely to include all urea-formaldehyde or melamine - formaldehyde condensation products from monomers to polymerized products.) Water - soluble urea-formaldehyde resins were found to impart excellent wet strength both to rosin-sized and waterleaf paper when the paper web was impregnated with the resin solution and the resin subsequently cured on the paper machine driers.

Untile very recently, this so-called tub application was the most satisfactory method of applying wet strength resins to paper. This limited the use of the resins to those mills which had size presses or some other means of surface application. A more general method of application was needed.

Problems of Beater Application

● Innumerable efforts have been made to apply wet strength material to the paper stock before the paper is formed on the wire, and in fact, several patents have been issued on specific applications of this nature. However, none of these has been entirely satisfactory.

One big problem in connection with beater application is that of retention. (Beater application in this article is intended to include treatment of the stock, not only in the beater engine, but also at any point before the paper web is formed.) The concentration of fibers in paper stock before it reaches the wire is around one per cent. If small amounts of resin are added to the fibers at this low concentration, the resin concentration will then be in the order of 0.01 to 0.05 per cent resin in the water. This means that wet strength resins which are relatively insoluble, but still soluble to the extent of the above resin concentration, would be unsatisfactory because the resin would be dissolved and lost in the water of the papermaking process.

Unpolymerized urea - formaldehyde resins are water-soluble, and to render them insoluble for possible use in beater application, it is necessary to polymerize them. Several patented wet strength processes are based on this controlled polymerization. However, the fact that a resin has been rendered water-insoluble is not alone enough to make it a satisfactory wet strength resin. A highly polymerized, water-insoluble resin, dissolved in a solvent, emulsified, and then applied to fibers in a stock suspension, may give fair retention, but the wet strength may still be negligible. It is therefore reasoned that since retention is not the only necessary feature for a wet strength resin distribution of the resin on the fiber must be an important factor. The problem, then, seems to be: to obtain an essentially insoluble resin that will distribute itself uniformly on the paper fibers.

Melamine-formaldehyde Resins

● Recently it has been found that melamine-aldehyde resins will impart wet strength properties to paper. Melamine resins are relatively new, but already they are providing, among other things, better finishes for automobile bodies and new plastics unsurpassed in electrical resistance. Their high durability and other desirable properties more than compensate for their higher unit cost.

Melamine is basically a triazine consisting of a six-membered ring of alternate carbon and nitrogen atoms. Each carbon atom is also attached to an "NH_2" group, and it is these groups that react with formaldehyde. (Figure 1.)

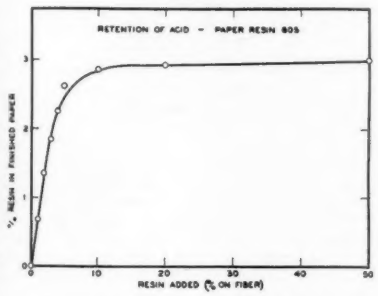
Melamine resins, after treatment with acid under carefully controlled conditions have unexpected new properties which differ fundamentally from the urea resins. When this acid-treated resin is allowed to age, polymerization takes place and a blue haze develops, indicating the presence of resin particles in the colloidal range. One remarkable property of these colloidal particles is that they have a positive charge, as

*Member TAPPI, Paper Chemical Section, Stamford Research Laboratories, American Cyanamid Company, Stamford, Conn.

determined by cataphoretic methods. Cellulose fibers are considered to be negatively charged, so the addition of the positively charged, colloidal resin should result in a mutual attraction. Apparently this is exactly what happens.

When the resin colloid is mixed with paper stock, it almost immediately attaches itself to the fiber and forms such a close bond it cannot be washed free. Complete retention of the resin by the fiber is not achieved, but up to about five per cent resin solids based on dry fiber, the retention plotted against the resin added is almost linear. However, above five per cent a sharp break occurs, and practically no additional resin is held by the fibers, even though the amount of added resin is increased to 50 per cent of the dry fiber weight. (Figure 2.)

FIGURE 2
Retention of Acid-Paper Resin 605



Physical Properties of Treated Paper

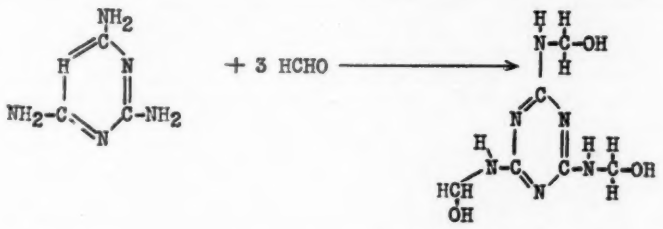
Cellulose fibers treated with three per cent of this resin colloid retained between 60 and 80 per cent of the added resin. The wet strength, as measured by wet tensile strength after soaking 16 hours, increased from almost nothing to 50 or 60 per cent of the original dry strength. Wet Mullen increased in about the same proportion, while the wet rub resistance (double strokes to wear through the paper) rose from an average of ten, to several thousand. These effects should result from any satisfactory wet strength treatment. However, this specific beater treatment was found to give, in addition, unexpected valuable properties.

The dry Mullen and dry tensile values were increased about 15 per cent. The folding endurance, instead of dropping, as is the case when wet strength is obtained by tub treatment, was materially increased, sometimes as much as several hundred per cent.

FIGURE I

Urea-Formaldehyde and Melamine-Formaldehyde Condensation Reactions

1 mol urea + 2 mols formaldehyde ⟶ dimethylol urea



1 mol melamine + 3 mols formaldehyde ⟶ trimethylol melamine

The aging properties of this beater-treated paper were also found to be remarkable. In working with wet strength papers containing urea-formaldehyde, it had been noted that the wet strength effect was decreased on aging, and that this drop was particularly rapid under storage conditions of high temperature and humidity. However, the melamine resin maintains its effectiveness even under these storage conditons. (Figure 3.)

Under accelerated oven aging conditions of 72 hours at 105° C. (aging test used by U. S. Bureau of Standards), the beater-treated paper retains its folding characteristics remarkably well. As may be noted in Table I, the folding endurance of the beater-treated paper so aged is higher than that of the original untreated paper, and is much higher than the tub-treated samples. This table also shows the tearing strength of these same samples at various aging conditions. The tearing strength is lowered by all wet strength treatments, but the beater-treated paper shows less lowering of

FIGURE 3
Permanence

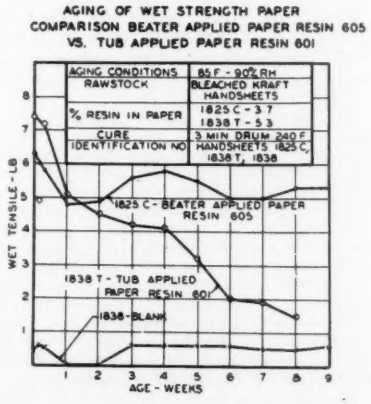

AGING OF WET STRENGTH PAPER
COMPARISON BEATER APPLIED PAPER RESIN 605
VS. TUB APPLIED PAPER RESIN 601
AGING CONDITIONS
85 F - 90% RH
RAWSTOCK
BLEACHED KRAFT HANDSHEETS
% RESIN IN PAPER
1825 C - 3.7
1838 T - 5.3
CURE
3 MIN DRUM 240 F
IDENTIFICATION NO
HANDSHEETS 1825 C, 1838 T, 1838
1825 C - BEATER APPLIED PAPER RESIN 605
1838 T - TUB APPLIED PAPER RESIN 601
1838 - BLANK
WET TENSILE - LB
AGE - WEEKS

TABLE I
Oven Aging Tests*—105°C.

Type of Resin	Applied at	Wet Tensile** Hours aged 0	16	72	FOLD-MIT Hours aged 0	16	72	Tear-Elmendorf-g. Hours aged 0	16	72
(Blank)		0.5	1.4	1.9	223	219	152	84	79	75
Urea-formaldehyde	Tub	10.3	10.8	11.2	189	120	40	45	47	34
Melamine-formaldehyde	Tub	4.6	11.9	11.4	191	89	41	64	48	38
Melamine-formaldehyde + HCl	Beater	8.1	9.3	9.0	1035	834	461	69	72	54

*All tests made on bleached kraft handsheets with approximate basis weight of 50 lb. (25 × 40"—500).

**Wet tensile measured in machine direction on strips soaked 16 hours. Results expressed as pounds per inch.

tear values than either tub treatment.

The operating advantages of this "beater" wet strength melamine resin compared to a tub application of urea resin are obvious. No size press or other special equipment is required, the resin cures more rapidly due to the preliminary polymerization obtained by the acid treatment, and practically no formaldehyde fumes are evolved from the paper during the drying operation.

Preparing the Resin

The melamine resin (Paper Resin 605) as received by the mill is a finely pulverized white powder. The general procedure is to dissolve the dry resin in a mixture of warm water and hypdrochloric acid, and then dilute with cold water to 12 per cent resin solids. This makes one gallon of solution equivalent to one pound of dry resin.

This solution is allowed to age for at least 12 hours, after which time it is ready to be used. In this condition, the solution will normally keep several days, but if kept too long will gel and become unfit for use.

The most satisfactory point of application for the resin solution is after all beating and other refining have been completed, and a point often selected for this addition is at the fan pump. The treated paper coming off the machine will have appreciable wet strength, and this will normally improve after aging a few days.

Effects on Paper or Machinery

At this point it may be asked: is there any danger to the paper itself or to paper mill equipment in using this resin colloid? The use in the paper mill of a strong, volatile acid such as hydrochloric might be considered harmful. Indeed, in laboratory tests where this acid-resin solution was used as a tub application, the resultant paper was extremely brittle and discolored. However, paper formed from slush stock to which had been added the same quantity of this solution has high wet strength, extremely high folding endurance, and good "permanence." The explanation is that the acid does not go with the paper, but remains with the white water. This has been definitely checked by chemical analysis and by radioactive tracer methods.

Then the question may still be asked: does this acid do any harm in the white water or stock systems? Preliminary laboratory tests indicate that under the prevailing conditions, pH is the significant factor in corrosion, irrespective of what acids are present. These tests were performed by immersing bronze paper machine wire in two white water samples adjusted to a pH of 4.5. One of the white water samples was from stock treated with 5% acid resin colloid plus alum while the other contained alum only. The white water containing the acid resin was no more corrosive than the one containing alum alone.

A little simple arithmetic demonstrates why the acid can have only a slight effect on the pH of the stock. When three per cent resin (on fiber) is used, which is sufficient for most purposes, the concentration of hydrochloric acid is about 0.5 per cent on the fiber. With the fiber at about one per cent consistency, the actual acid concentration would be about 0.005 per cent. The natural salts in the water and stock neutralize most of this acid, but usually some drop in pH does occur. The actual drop depends on the buffering capacity of the paper mill water and has varied from no noticeable drop to 0.7 of a pH unit. In any case, if the lower pH is objectionable, the stock may be adjusted to any desired value, either before or after the addition of the acid resin, with no effect on the resin retention. However, the rate of cure of the resin will be affected by the pH. This melamine resin, as well as urea-aldehyde resins, cures faster at low pH values. Excellent cures are obtained in the normal papermaking pH range of pH 4.5 to 6.0.

Use With Other Chemicals

As far as is known, any of the usual papermaking sizing materials and fillers may be used with this treatment. No deleterious effects have been found, and in fact some combinations may give additional beneficial effects. Some of the materials used with the beater resin thus far have been rosin size, wax size, alum, starch, glue, and clay and other fillers. When both rosin size and the acid resin are used in a stock, a definite increase in water resistance results. If no size is used, the presence of the beater resin does not affect the water penetration, although slightly less water may be absorbed.

Some interesting results have been noted in laboratory experiments in which various types of dyes were incorporated with the resin-treated stock. It was found that with some dyes changes in shade, strength, and fastness properties occur. For example, the fastness to bleeding of many dyes in hot or cold water was definitely improved. In some instances, however, decreased fastness to light was observed, and apparently the decrease in light fastness was proportional to the amount of resin present. Obviously these implications will be of great interest to manufacturers of many grades of paper. An extended investigation is in progress, results of which will be made available as soon as possible.

(Most of the work on dyes is being carried out by the Heller & Merz Department, Calco Chemical Division of the American Cyanamid Company at Bound Brook, N. J.).

Importance of Refining

The question may arise as to what type of fiber is best suited for wet strength purposes. Based on considerable laboratory investigation and a number of mill trials, it has been concluded that the beater resin treatment is equally effective on any form of cellulose fiber, although the results are naturally more noticeable when used with a strong pulp. For example, a wet strength kraft sheet may have a dry tensile strength of 20 lb. and a wet tensile of perhaps 10 lb. A groundwood sheet given similar treatment, having a dry tensile of 2 lb., would be expected to have a wet tensile of 1 lb.

The effect of refining the stock is peculiar. It was mentioned above that the best point to add the resin solution to the stock is after the stock has been fully refined. Two batches of pulp were beaten and refined similarly in laboratory equipment, except that in one case the resin was added to the stock at the beginning of the beating cycle and samples taken at intervals. In the other case, no resin was added to the pulp before beating, but was added to separate samples taken throughout the beating and refining cycles. The results are shown in Table II.

It should be noted that the resin retention is practically the same in the two series, but the efficiency of the treatment is over a hundred per cent better in the sheets made from stock that was first refined, then resin-treated.

Applications

The possible uses of wet strength paper are almost infinite, patricularly when dry strength and fold endurance are also increased, as they are when the beater method is used. First and foremost are the wartime demands for products such as camouflage strips and netting, paper bags that must substitute for burlap and shipping containers that will not fall apart when saturated with water.

Other applications for the beater resin range from the production of blueprint stock and strong papers for wrapping vegetables and meat, to towel stocks consisting mainly of groundwood. The additional dry strength obtained permits the use of lighter weight paper in many instances, thus releasing pulp for other uses, and partially offsetting the cost of the wet strength treatment.

Acknowledgment

The work reported in this paper is the result of the cooperative efforts of many individuals, and the author wishes to acknowledge the valuable assistance of several groups at the American Cyanamid Company's Stamford Research Laboratories and at the Laboratories of the Calco Chemical Division at Bound Brook, N. J.

TABLE II

Effect of Adding Resin Before or After Refining*

Length of Beater Treatment (Full Load) Min.	Length of Morden Refining Min.	No Resin Added Fold MIT	No Resin Added Wet** Tensile	Resin Added Before Morden Resin %	Resin Added Before Morden Fold MIT	Resin Added Before Morden Wet** Tensile	Resin Added After Morden Resin %	Resin Added After Morden Fold MIT	Resin Added After Morden Wet** Tensile
0	0	2	1.0	1.5	24	2.7	1.4	18	2.9
15	0	28	2.0	1.7	264	5.1	1.5	522	7.0
15	2	114	2.4	2.2	1074	7.8	2.0	1148	10.2
15	5	576	2.9	2.4	1177	7.6	2.1	1141	11.7
15	15	1537	2.7	2.4	1517	6.6	2.3	2160	15.8
15	30	1762	2.5	2.3	3181	5.3	2.4	3233	14.4

*All tests made on bleached kraft handsheets with approximate basis weight of 50 lb. (25 × 40"—500).

**Wet tensile measured in machine direction on strips soaked 16 hours. Results expressed as pounds per inch.

Army-Navy E Award Goes to Shartle Bros.

● The highly prized Army-Navy E, symbol of efficiency in the execution of government contracts was presented to Shartle Bros. Machine Company, Middletown, Ohio, on April 6.

Present at the colorful ceremony were representatives of the Army and Navy, mill representatives and other honored guests, as well as the entire Shartle organization and their families.

The award to Shartle Bros. was for quality work done and the volume and speed of production. Both were accomplished under trying circumstances by men aware of the seriousness of the emergency and willing to labor long and hard for victory. Many time-slips for 72 and 84 hours testify to the determination of the men.

Operations run approximately 97 per cent war contracts, and are conducted on a round-the-clock schedule. These contracts cover many different items, among them jordans for the manufacture of nitrocellulose, shafts for Liberty ships, Corvettes, etc.

Shartle Bros., established in 1889, devotes its peacetime engineering and fabrication facilities entirely to the manufacture of paper mill machinery and systems. Over the years numerous major developments stand to their credit, prominent among them the perfection of the first practical plunger stock pump; also the principle of continuous beating, in contrast to batch beating, exemplified in the Shartle breaker beater.

Officers of the company are Herman L. Kutter, president of the Black-Clawson Co., Hamilton, Ohio, of which Shartle is a division; Homer L. Martindale, vice-president and general manager; Adam E. Bridge, vice-president in charges of sales; and Clifford Crawford, vice-president and chief engineer.

Arrington Leaves Alaska

Sergeant Lowell Arrington, U. S. Army, stationed in Alaska for the past 21 months, visited familiar surroundings at the plant of the Weyerhaeuser Pulp Division, Longview, Wash., in March. He was headed to officer's candidate school. Sgt. Arrington worked in the sulphite mill in the Weyerhaeuser plant for six years.

Party for Joe Heigel

● A farewell dinner was given April 2, for J. S. "Joe" Heigel, cost accountant at the Weyerhaeuser Timber Co. Pulp Division at Longview, Wash. Mr. Heigel moved to Portland April 5 to join work for George Black & Co., public accountants. He had been employed for eight years at the Weyerhaeuser plant.

New Owners Acquire Vancouver Paper Box

● Interests headed by Kenneth F. R. Mair and E. D. Judson, both of Vancouver, B. C., have acquired the manufacturing plant of Vancouver Paper Box Company, Ltd., and will operate it as an independent producer of folding and set-up paper boxes.

During the past year the plant at 245 Union Street, Vancouver, was owned and run by the Victoria Box & Paper Company, headed by R. L. Challoner, Victoria, who purchased it from Japanese interests through the Alien Property Custodian last year.

Japanese had owned and operated the factory since its inception several years ago.

Mr. Mair, who will manage the business under its new designation as Vancouver Paper Box (1942), Ltd., has had extensive experience in the paper box industry, and for the past several years has been manager of the Davies Paper Box Company, Vancouver.

Sales of the company's products have been made as far east as Winnipeg, and it is planned to expand the plant as market developments justify.

Neil Sinclair Moves To New Los Angeles Office

● Neil B. Sinclair, past president of the Paper Mill Men's Club of Southern California, and representative of several paper mills, recently announced the removal of his office from 820 McGarry Street to 2027 North Edgemont Street in Los Angeles (Phone: Normandy 2-6531).

Mr. Sinclair, who holds the traditional job of handling reservations for the PMMC's Hi-Jinks, represents Nashua Gummed & Coated Paper Company, Nashua ShureHold Company, West Carrollton Parchment Company, Berwin Paper Corporation and Cleveland Tanning Company.

Hunt Becomes Assistant to Bankus; Other C-Z Men Are Promoted

● Reed O. Hunt, 38-year old Camas, Wash., plant office manager, who has been in the service of Crown Zellerbach Corporation since 1927, will take up new duties in the main office in San Francisco in May as assistant to Albert Bankus, vice president.

During April Mr. Hunt made a tour of northern mills with Mr. Bankus and Don S. Denman, vice president, whose headquarters are in Seattle.

REED O. HUNT, who becomes assistant to Albert Bankus, vice president in charge of operations of Crown Zellerbach Corp. Mr. Hunt's promotion brought others in C-Z offices.

Mr. Hunt's promotion led to the advancement of several other men as office managers and assistant office managers of Crown Zellerbach mills.

Hugh Burdon, office manager at West Linn, Ore., will take the position of office manager at the Camas plant of the organization. He has been with the Crown Zellerbach organization for 32 years, his first employment being at Ocean Falls. He has served as office manager at Cathlamet and Port Townsend, as well as at West Linn.

William Little, former assistant office manager at West Linn, has been promoted to office manager there. He came to West Linn from the Cathlamet logging department office in 1936.

R. E. "Dick" Lawton, for several years head of the stenographic and milling departments at Camas, has moved to West Linn as assistant office manager. He was a graduate of the Camas Paper School this year. While working in Camas, he lived in nearby Washougal, where he recently was elected to the school board and was head of the civilian defense aircraft warning service. He has purchased a home at West Linn.

Mr. Hunt was born in Peirce County, Wash., raised in Gig Harbor and graduated from Stadium High School, Tacoma, Wash. He started working for the C-Z Corporation in Port Angeles, Wash., in 1927, leaving there as assistant office manager in 1933 to go to Camas for a year and then to West Linn, where he became office manager in 1935. He Went to Camas a year ago after previous short terms there.

He is married and has two children, Reed, Jr., 16, and Patricia, 15.

Hesse-Ersted Iron Works Awarded "M" Burgee For Liberty Ship Work

Ken Hall, President, lauds employes of Portland firm for devotion to duty in turning out vital war products for Maritime Commission ' ' ' He and Arthur M. Mears had their plant ready for service to country when needed ' ' ' Pulp and paper mills' machine shops help in achievement.

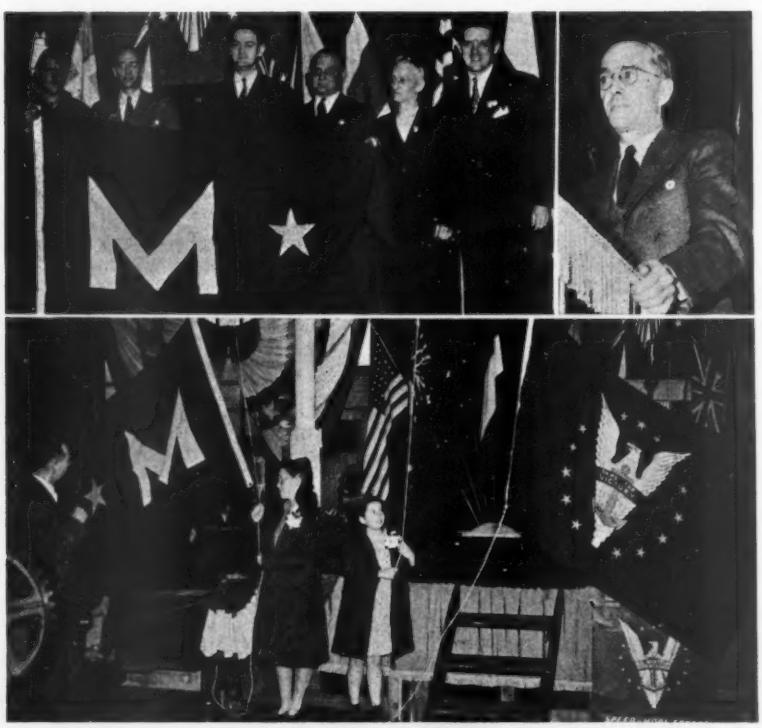
● One of the select group of Pacific Coast industries to receive the highest tribute attainable from the U. S. Maritime Commission for excellence of war work, the Hesse-Ersted Iron Works of Portland, Ore., was awarded the "M" burgee and Victory Fleet flag in ceremonies at the plant March 17.

The awards, which included the official Maritime Merit badges for the 325 employes of the company, were made in behalf of the commission by Richrd W. Owens, industrial advisor for the national agency, which represented Admiral H. L. Vickery, chairman of the commission's board of awards.

Kenneth B. Hall, president of the company, in the closing speech of the ceremonies, lauded the devotion to duty of the entire plant force. The Merit badges were accepted for the employes by two selected from their number, Harry Walsh and Walter Linton. The flags were accepted by Lawrence Frey, superintendent, in a speech in which he praised team work in the plant. Mayor Riley of Portland and Ernest Farnand vice-president of the company, made talks.

The Hesse-Ersted Iron Works is well known in the pulp and paper industry of the west coast, having done much work for the mills. In attaining his company's high record of achievement in war work, Mr. Hall called on the machine shops of the pulp and paper mills for assistance. He paid high tribute to their cooperation in helping his company to turn out windlasses and anchor winches for the Liberty ships in a statement made to a representative of the magazine. Mr. Hall gave liberally of his time in advising and assisting the pulp and paper mills in setting up their machine shops so they could participate in this war work.

The Hesse-Ersted plant in Portland was established in 1917 to build deck machinery during World War I. It was taken over by Mr. Hall, Arthur M. Mears, the secretary-treasurer, and their associates shortly before the United States' entrance in the present war. The new management, with the assistance of a number of veteran employes, did a speedy job of repairing and placing in good condition the World War I machinery and getting themselves ready to come to the aid of their country when the war broke out. They were ready to go ahead at full speed when the Maritime Commission offered them an original contract for 146 anchor windlasses for Liberty ships, the cargo-carrying vessels of the war fronts.



Upper left: from left to right are HARRY WALSH, representative of employes; KENNETH B. HALL, President of the company; RICHARD W. OWENS, Industrial Advisor for the U. S. Maritime Commission; LAWRENCE FREY, Plant Superintendent; WALTER LINTON, representative of employes, and GEORGE CASTNER, Assistant Treasurer of the company. They are holding the "M" burgee awarded March 17 to the Hesse-Ersted Iron Works of Portland, Ore.

Upper right: MR. HALL, delivering his address, in which he asked employes' wives to help their husbands to stay healthy and happy and so to reduce absenteeism.

Below: Left to right are MR. HALL, his daughter, JEAN, and CAROL FREY, daughter of the Plant Superintendent, raising the "M" and the Victory Fleet flags.

Ahead of Schedule

The awards were given Hesse-Ersted because its contracts were delivered well ahead of schedule. The pre-war personnel totalled about 100 men and was more than tripled by the time the awards were made. Besides producing anchor windlasses for both Liberty ships and tankers for the Maritime Commission, the plant produced 75 cargo winches and 14 anchor windlasses for the U. S. Navy last year and is continuing this production.

The company built 68 windlasses in 1941, 454 in 1942 and already had delivered 83 this year up to the date of the awards. Its 1943 schedule is

about 25 per cent over last year's.

Addressing the wives of workmen, Mr. Hall urged them to co-operate by helping the men to keep healthy, happy and on the job, thus to increase man-hours in the plant. "After all," he said, "it is man-hours on the job that turns out our products."

Hall declared the plant's foundry, although working under handicaps, is turning out more products per man-hour than any other on the Pacific coast. He lauded the machine shop and pattern shop employes, and named various department heads who have done excellent work. Old employes who were with the plant during the first world war, when it was established to build deck machinery for ships, have given the plant a friendly feeling, he said.

Assisting with the raising of the burgee and victory flag were Jean Hall, daughter of the president, and Carol Frey, daughter of the superintendent.

Master of ceremonies was George R. Castner, assistant treasurer of the company.

Firtex Used In War Houses

● Several million feet of Firtex board are being used in the ceilings of the rapidly growing town officially named Vanport, Ore., and unofficially dubbed Kaiserville.

Construction work at Vanport, which lies between Portland and Vancouver, Wash., and which takes its name from those two neighbors, has been slowed up because of bad weather and shortage of manpower. But within the next few weeks it is expected to become the second largest city in Oregon, ranking next to Portland. As rapidly as units are completed, shipyard workers are moving in.

Three-eighths-inch Firtex is being used for ceilings of the dwellings. The St. Helens, Ore., plant which produces that paperboard had one order for 3,000,000 feet for Vanport. Other orders have come from the same housing project for about 1,000,000 feet on two occasions.

Willard H. Dow Awarded Chandler Medal

● Willard H. Dow, of Midland, Mich., president of the Dow Chemical Company, was awarded the Charles Frederick Chandler Medal by Columbia University on April 8 for achievements in the field of chemistry.

The citation particularly mentioned the company's achievements in producing bromine and magnesium from sea water and its synthetic plastics and rubber production.

Since the Dow company's merger with Great Western, it has supplied chlorine, ammonia and other products for the Pacific coast pulp and paper industry.

Buff Natwick's Daughter Wins Trip to New York

Phyllis Natwick, daughter of A. G. Natwick, assistant resident manager of the Camas, Wash., mill of the Crown Zellerbach Corporation, has won further recognition as a concert pianist by winning the district contest for young artists which took place in Portland on April 4.

Miss Natwick had previously won in the state contest and this latest achievement sends her to New York, where on May 6, she will compete with the country's finest musicians for the opportunity of entering the Schubert Memorial contest, the much sought goal of young artists.

Mr. Natwick will accompany his daughter on her trip to New York.

Larry Harris Becomes Sorg Executive

● Lawrence (Larry) Harris, formerly with Pacific Mills, Ltd., as a member of the laboratory staff, has been appointed assistant superintendent of the Sorg Pulp Company plant at Port Mellon, B. C.

In announcing the appointment General Manager Herman Simpson, who recently returned from a trip to Sorg head office and mills at Middletown, O., stated that Mr. Harris has been with the Sorg organization since 1941. He was educated at Vancouver, B. C., and was graduated from the University of British Columbia.

Soon afterwards he went to Ocean Falls, B. C., to work for Pacific Mills.

Binzer Made a Captain

Harry Binzer, Executive Secretary of the Puget Sound Pulp and Timber Company of Bellingham, Wash., has received a commission as captain in the United States Army Reserve.

Mr. Binzer has been a member of the reserve officers for the past 18 years. He served as Senator in the State Legislature during the last session, and before coming to the pulp company he was city comptroller of Bellingham.

Lieut. David Killam Married

● Lieut. David Killam, D.S.C., son of Lawrence Killam, president of B. C. Pulp & Paper Company and himself a former employe of the company, was married recently in his home town, Vancouver, B. C., to the former Miss Elizabeth Hebb. It was the third wedding between the three sons of Mr. Killam and three daughters of the late Prof. T. C. Hebb.

Lieut. Killam is one of British Columbia's most distinguished naval officers. He was decorated with the Distinguished Service Cross for his heroism during the evacuation of British troops at Dunkirk in March, 1940.

At that time he was with a group of young Canadian probationary officers enroute to a British training establishment. He volunteered to go with a small party from the training station to assist with demolition work. The plan was to destroy installations that might fall to the enemy, then fast advancing towards the French coast.

The destroyer on which Killam served proceeded to StValerie to assist in the evacuation of the remnants of the British Fifth Division. He made three attempts to reach the shore from the destroyer in a speedboat. Three times his little vessel was capsized by near misses from German shore batteries.

Harold D. Cavin Appointed Lieutenant-Commander

● Harold D. Cavin, resident engineer, Puget Sound Pulp & Timber Company, Bellingham, Wash., was appointed a Lieutenant-Commander in the Civil Engineering Corps, U. S. Naval Reserve, and was sworn in March 19.

He was immediately given his orders to report for active duty on March 29 at the U. S. Naval Construction Training Center, Camp Peary, Williamsburg, Va., for his indoctrination training. He left Seattle by plane March 26.

Commander Cavin will be on leave of absence from the Bellingham organization for the duration. He has been resident engineer for Puget Sound since May 1940 when he returned to the Pacific Northwest from a year at Mobile, Alabama, where he served as resident engineer for Hardy S. Ferguson of New York on the construction of the Hillingsworth & Whitney bleached kraft pulp and paper mill. This work in the South followed the completion of the first new unit of the Puget Sound Pulp & Timber Company's unbleached sulphite pulp mill which was designed and supervised by the Seattle consulting engineering firm of Cavin, Marshall & Barr of which he was then a member.

Prior to his connection with the Puget Sound Pulp & Timber Company, Commander Cavin was resident engineer for the St. Regis Paper Company, Kraft Pulp Division at Tacoma, and supervised the modernization of the mill in 1936 and 1937. His first connection with the pulp and paper industry was as field engineer on the construction of the Tacoma mill in 1928. Before becoming associated with the industry he was field engineer for the Port and Harbor Division of the Port of Tacoma and had served three years as construction engineer for the City of Tacoma.

Following his return to the Pacific Northwest in 1940 from Mobile, he designed and supervised the expansion of the Puget Sound mill which was completed in the summer of 1941 and which brought the daily capacity to more than 470 tons.

Commander Cavin is a member of the American Society of Civil Engineers and the American Pulp & Paper Mill Superintendents Association.

Sumner Iron Works Wins Highest Award For War Effort

President Flateboe gives production figures on output of steering engines and anchor windlasses for U. S. Liberty ships and Canadian Victory ships ✓ ✓ ✓ Audience sits in midst of tools for impressive rites as workmen, in overalls, sing "Song of Victory Fleet" ✓ ✓ ✓ Company continues to serve pulp and paper mills.

● The "M" burgee for the plant and Maritime Merit badges for each employee — highest awards of the U. S. Maritime Commission—were formally presented to the Sumner Iron Works of Everett, Wash., on March 27.

Several hundred persons, sitting midst the tools in a large machine shop, while heavy rain pounded on the roof, saw the coveted flag for outstanding war work unfurled while a chorus of a dozen employees, wearing their work clothes, sang the "Song of the Victory Fleet."

The awards were for production of steering engines and anchor windlasses for the Liberty ships, the famous cargo carriers of this war. The Sumner Iron Works also has provided the bulk of these vital parts for the so-called Victory ships of Canada, which are sister ships of the United States cargo vessels.

Speakers on the program recalled how the company had turned, some years ago, to production of paper and pulp machinery after reaching the peak of sawmill and shingle mill machinery production. They noted that in the same way the Everett firm turned to ship machinery, when war came, while continuing to serve its old clients in the Northwest pulp and paper industry.

Officially presenting the awards as representative of the USMC, Charles H. Walls, resident engineer of the Oregon Shipbuilding Corp., said, "It will take all the effort we can muster and all the machines we can produce, to win over the enemy."

Speaking for his associates, Frank F. Sumner, vice-president, and M. S. Mitchell, secretary-treasurer, and the employees, E. I. Flateboe, president of the Everett company, asked Mr. Walls to thank Admiral Emery S. Land, chairman of the USMC, and Admiral H. L. Vickery, vice-chairman, for the awards. Mr. Flateboe said:

Principals in ceremonial award of U. S. Maritime Commission's "M" burgee to the Sumner Iron Works, Everett, Wash., on March 27th. In foreground is scroll signed by employees and presented to the management.

Left to right: CHARLES S. WALLS, Oregon Shipbuilding Corporation Resident Engineer who represented the USMC; MILES S. MITCHELL, Secretary-Treasurer of Sumner Iron Works; EINAR I. FLATEBOE, President and General Manager, and FRANK F. SUMNER, Vice President.

Mr. Flateboe's Address

● "The first steering engines and windlasses for the Liberty ships were furnished by the Sumner Iron Works, and up to this time we have furnished this equipment for approximately three and one-half to four million tons of shipping. This is about one-half of all the tonnage of this class built during 1942.

"In addition, and within the same time, we furnished all the steering gears for the British Purchasing Commission for a total of 600,000 tons and windlasses for half this tonnage.

"When we first started this work for the U. S. Maritime Commission we made commitments for only a few units per month. Today we furnish about ten times as many units.

"For about a year now we have worked 48 hours per week regularly, with a great many of the boys putting in a lot of overtime. We have been very fortunate in not having labor troubles of any kind, and an exceedingly small turnover in skilled mechanics."

Host at a party later at the Everett Country Club for employes and friends, Mr. Flateboe recalled to a representative of this magazine that Sumner Iron Works has made all the drawings for steering engines and windlasses for the United States Liberty ships and Canadian Victory ships. They were made from old British drawings, photostated, and it was a difficult job, he said. The drawings were adapted to American-Canadian machin ship practices. The Sumner Iron Works furnished these drawings gratis to other American firms given USMC contracts, and even gave them special jigs to help in the work, which in peace times would have been considered competitive. The Canadian Sumner Iron Works of Vancouver, B. C., also joined in the production and sent representatives to the Everett awards presentation.

First At Guadalcanal

● The tall, silver-haired president of the Everett company, who lost a son in the service of his country in a flying accident recently, and who has another boy, Lieut. William Flateboe, in the U. S. Navy air corps, read a telegram at the plant ceremony from Don C. Jaxtheimer, chief expeditor of the Oregon Shipbuilding Corp., which said in part:

"It may be of interest to you to know that our ten-day ship, the Joseph N. Teal, equipped with Sumner steering en-

gines No. 152, survived heavy Jap fire and was the first Liberty ship to land supplies on Guadalcanal."

H. W. Ringman, machine shop superintendent, was master of ceremonies at the award affair and led the chorus in singing. The Everett high school band played. William Clinton Biggs, plant superintendent, accepted the awards and George Meyers, machinist and an employee since 1906, and Arthur Soley, moulder and an employee since 1910, represented the plant crew in accepting the Merit badges.

Mr. Sumner, in a brief talk, recalled the company's recent 50th anniversary and said that as a boy he had passed out tool checks to Mr. Meyers 37 years ago. Mr. Mitchell declared "we will continue to build this machinery until the unconditional surrender of the Axis."

W. M. Jenkins, a director, related the history of the company, founded in 1892, by Mr. Sumner's father and uncle, Thomas B. and Fred W. Sumner.

Mayor J. D. Williams, of Everett, praised teamwork of management and employes, as did also Ed. W. Schultz, labor union representative.

In a surprise event on the program, Robert "Bob" Knight, steel foundry foreman, presented a scroll to Messrs. Flateboe, Sumner and Mitchell which was signed by every employee of the plant. He said the scroll was a "token of appreciation."

Canadian Association Reports On Industry's War Production

Lawrence Killam elected to executive committee ' ' ' Canadian producers expected to make up for fifty per cent reduction in United States pulp shipments to Britain.

● In addition to providing all Canada's and most of Britain's war needs of nitrating pulp for the manufacture of explosives, Canadian pulp mills are turning out other war essentials, E. Howard Smith, president of the Canadian Pulp & Paper Association told the annual meeting in Montreal recently.

Lawrence Killam, president of the British Columbia Pulp & Paper Company, represented the west coast mills at the meeting and was elected a member of the executive committee.

The industry, according to Mr. Killam, is now producing shell containers, packaging for war equipment and parts, boxes for food and clothing, charts, maps and stationery for the armed forces.

By supplying nitrating pulp the mills have overcome the difficulty of getting sufficient cotton linters for production of nitro-cellulose or gun cotton.

In addition, the industry is supplying Canada's and Britain's requirements of dissolving pulps for making rayon yarn, staple fibre, plastics, cellophane and associated products.

Because of the shortages of critical materials, need to seek substitutes and evolve new designs and unexpected changes in production policies to meet war conditions, deliveries of "bits and pieces" from the industry's Wartime Machine Shop Board program was less than expected in 1942, although it will be higher this year.

In his report to the association, F. G. Robinson, chairman of the pulp section, said that at the onset of war the Canadian chemical pulp industry recognized that Canada and the United States might become the sole source of chemical pulp supply to the United Nations. To that end it set itself to meet the situation, not by building new plants but by increasing output of existing plants by better balancing of operations and other improvements toward efficiency.

Doing Big Job

● At present all pulp requirements of the Canadian Government for nitration into explosives are met with chemical pulp made in Canada, as are also practically all British Government requirements for this purpose.

All United Kingdom requirements of dissolving pulp for making rayon yarn, staple fibre, plastics, cellophane and allied products of essential war needs, are supplied by Canada. Total shipments of chemical pulp to Great Britain are currently at about four times the pre-war rate.

Help U. S. Operators

To relieve U. S. pulp producers as to shipments under lease-lend to United Kingdom, Great Britain's Ministry of Supply reduced its pulp requirements from the United States for 1943 by about 50 per cent as compared with 1942, relying on Canada to make up whatever shortage in British supplies might develop.

Last year Great Britain's consumption of new pulp, as distinct from consumption of reclaimed papers, stood at 25 per cent of the pre-war rating. For 1943 consumption has been squeezed down to about 21 per cent of pre-war rates. Canada currently supplies 70 per cent of the total Great Britain pulp consumption.

"Good Neighbor" Policy

● Shipments of chemical pulp have been maintained also to Latin-American countries to co-operate, by special request of the Canadian and United States governments, in the "good neighbor" policy to Latin-American countries sponsored by both countries.

By far the largest part of Canada's chemical pulp shipments go to the United States, Mr. Robinson reported. Before the war, the U. S. imported annually from Europe about 1½ million tons of pulp and a smaller quantity from Canada. Since the onset of war, shipments of chemical pulp from Canada to the U. S. have been increased and are runnig at about 70 per cent more than the peak pre-war year of 1937.

Chicagoan Is Coast Visitor

● William Garrity, Chicago representative of the Munising Paper Company, was a business visitor to the Pacific coast in March, during which he renewed acquaintances in San Francisco.

ROBERT KNIGHT, Steel Foundry Foreman of Sumner Iron Works, who, in a surprise gesture by the personnel of the plant, presented a scroll to the management at the "M" award ceremonies on March 27. The scroll, signed by every employe, is shown here in its wrapping.

Los Angeles Man Nears Perfect Safety Record

● Norman Studer, refinery superintendent at the Pioneer Division of Flintkote Company, Los Angeles, makers of roofing and boards, has only a few months to go to establish for himself a spotless 25-year safety record.

His colleagues at the Los Angeles plant consider his no-accident record an unusual one because of the jobs he has held. Since 1930 he has been superintendent of the refinery where P-F coatings and saturants are made, a place where boiling asphalt, carelessly handled, could easily cause a dangerous accident.

Prior to 1930, Mr. Studer worked as a millwright and stillman. He started with the company in 1918, and his anniversary will arrive on October 1 next. He recalls when barrels of hard asphalt were hauled in on a narrow-gauge railroad and chopped up with an axe and dropped into the machine tank for conversion into coatings.

The refinery has been completely modernized since that day, but boiling asphalt, steam lines and heavy machinery still present hazards.

Cavallin Suffers Leg Injury

● Ernest Cavallin, oldest employee in number of years with the Puget Sound Pulp mill in Bellingham was in a hospital recently with a leg injury. It was expected to be several weeks before he would be back on the job, and it will probably be in the breakdown plant.

Where Job Instruction Training Fits Into the Induction Procedure

by R. H. WILLIAMS*

THE topic of this discussion is "Where Job Instruction Training Fits into the Induction Procedure."

Many private industries have recognized over a period of time the importance of employee morale to efficient production, basing their decision on the belief that the new employee's first impression of the company (whether it be good or bad) is the most lasting one.

Induction procedure means, to put it briefly, that plan and technique used in introducing and acquainting the new employee with his job and the whole organization as to Company policy; Company history, personnel policies; safety program and rules; mandatory deductions from wages earned by him, and optional benefits that he may obtain should he choose to do so. Of course, such procedure would vary, when the length of time the employee is hired for, and the nature of the job is considered. Obviously, it is unnecessary to give an employee hired for a period of two to four weeks the entire induction procedure; also the content of the induction procedure may vary with the nature of the job such as labor, office, supervisory or technical.

Why Are Induction Plans Necessary?

● Now that labor turnover is so great, induction plans are more necessary than ever before to rapidly orient the employee into the organization, job, etc.

First: Who are your new employees?
Do they have any idea of what organization means?
Has he had many or any jobs before?
What meaning does his experience give to words like "boss" "industry" and "work"?

Second: What does the new man think?
He may be in unfamiliar surroundings—new work—lack of security—nervousness—uncertainty, activity restircted but don't know how much. These things may result in misunderstanding of orders, putting him on the defensive, lack of confidence, and the wrong attitude toward rules and regulations, starting him out with a negative basis with his supervisor and other workers and with a negative attitude toward necessary discipline in the plant.

What Purpose Does Induction Procedure Serve?

● If an employee's first impressions of the organization and its policies etc., are good, they will be reflected in his attitude, manner and speech during his leisure hours outside of the plant, thereby strengthening employee - employer and public relations.

He will feel at ease so his relations with his foreman and others will start more smoothly.

He will have confidence in himself, therefore, he will be relaxed and will learn faster.

He will not violate regulations through ignorance and, accordingly, have a more positive attitude toward them.

He will get accurate information on the organization's objectives and methods of reaching them.

Where Should Induction Procedures Apply?

● In all departments and with all employees keeping in mind the plan developed for that department and occupation, and the length of time for which the employee is hired.

When Should the Procedure Start?

● With each employee when he comes to work and should carry along over a period of several days or perhaps weeks, by systematically giving him a portion of the organized plan each day until he understands it thoroughly but not in too large portions, or he will not be able to remember all of it.

Who Should Do This Job?

● The Industrial Relations Department should seek the advice of all people concerned, and then organize the plans that would apply to the various situations described before, after which everyone should be coached in his part including such jobs as the paymaster, personnel mgr., safety engineer, training director, manager of plant, supervisors, secretary-treas. Credit Union, foreman, leadman, fellow worker.

How Should It Be Done?

● Consider the mandatory deductions from the employee's wages, such as Old Age Benefit, Medical Aid Deductions under Workmen's Compensation Act or other.

Consider Optional Benefits such as Credit Unions, War Bonds, Group Insurance, Salary Allotment, Insurance, Non-Industrial Medical Contract or other.

Consider General Information such as, Purposes of Uniform Labor Agreement; Company Policy and Procedure; Company History; Service Pins; Safety Rules, when is pay day, where are the personal service rooms, geographical arrangement of offices and dep'ts., smoking rules and all of the other necessary information the employee should know to be considered fully inducted into the organization.

On information and rules, etc., given in written form, a follow-up plan should be used to check up to see if he has a thorough understanding of those things and other information given verbally so that misunderstandings will be avoided.

So far, we have discussed the induction plan generally but now the most important part is to be considered because if this man is to be brought up to full efficient production quickly, it will require that a definite plan of instruction be used so that the supervisor, foreman, or leadman can quickly impart his knowledge of materials, machinery, and methods to the 4th M which is MEN and here is where Job Instruction Training fits into the Induction Procedure.

Briefly, here is the "why" and "what" of Job Instruction Training and the plan followed in giving instructions in this manner:

Prior to the declaration of war on December 7th, the country was in the position of producing the essentials of warfare for the majority of countries who are now our Allies. As this type of business increased defense industries soon absorbed all of the available skilled laborers, ma-

*Assistant District Representative, Training-Within-Industry Division, War Manpower Commission, Portland. Presented at the dinner meeting held by the Pacific Section of TAPPI at Longview, Washington, January 5, 1943. Mr. Williams, who is on leave from the Crown Zellerbach Corp., and Rayonier Incorporated, was elected President of the Pacific Northwest Personnel Association at its convention in Spokane, January 8th.

chinists, pipe fitters, electricians, etc., then employed in private industry, and, in may cases, they also hired from private industry many of its skilled craftsmen. After December 7th, this country was immediately plunged in an "all out" effort for the production of materials for warfare. As the need for skilled men became more and more apparent, new and rapidly expanding war-production industries and also private industries scouted around to find men who were skilled and found out that as far as getting them was concerned, they were at the "bottom of the bucket." Ten years of industrial depression had been instrumental in the retarding of apprenticeship training, etc. Therefore, it soon became clear that the biggest, most important job of gearing up the business of producing guns, ships, tanks, etc., was the training of people many of whom had never been employed in industry, on how to do a job, or a part of a job that would release those people with greater skills to spread their knowledge and ability over a larger field.

In recognition of this vital problem, the heads of the Training-Within-Industry Division of the War Manpower Commission called a conference of other practical and prominent men in industry to assist them in organizing a training program—one part of this training is called Job Instructor Training.

To name a few of these men, we have: Mr. Chan Dooley, Industrial Relations Mgr., The Socony Vacuum Oil Company; Mr. J. W. Dietz, Employee Relations Mgr., Hdqtrs. Office, Western Electric Company; Mr. Mike Kane, Director of Training, American Telephone & Telegraph Company; Mr. Wm. Conover, Director of Training; United States Steel Corporation. One man among others, who helped in this program, is one who is very well known to this industry, Mr. A. R. Heron, Vice-President and Director of Industrial and Public Relations for Rayonier Incorporated and Crown-Zellerbach Corporation.

The enormity of this training problem can be visualized through this explanation: It is estimated that at the end of 1943, twenty million people will be employed in war production industries; 90% of these people must be trained on the job and 38% required skills. Today "the time is short" so there is not time enough for pre-employment training to supply trained people. Therefore, training must be done on the job. Hence, Job Instructor Training, which is not new; it was in the process of development and has been used in World War I. It was designed by practical industrial people and since then has been streamlined, and condensed down to the bare essentials for the use of supervision primarily.

It is necessary in doing a job of instruction to lay out a plan, just the same as an engineer would do, in laying out blue prints for the erection of a building, or the building of a new piece of equipment, etc. Therefore, the first thing we are going to consider is To Have a Plan. How much skill do we want this employee to have, and how soon—in other words, establish a time table.

Next, Analyze The Job — break the job down by listing the steps in sequence; pick out the key points. The key points are those very important things which must be remembered in doing the job — the little tricks of the trade, knacks etc. learned through experience.

Third, Have Everything Ready—the right tools, the right materials and the right equipment so that it will not be necessary to interrupt your instructions to the employee for the purpose of obtaining more materials or tools, etc. This is essential because an instructor loses a certain amount of prestige and respect when he shows a lack or preparedness during the instruction.

Fourth, Have The Work Place Properly Arranged — just as the worker will be expected to keep it. In other words, this is just good housekeeping because if he is given an example to follow, he will be more inclined to comply with the example than if it had not been stressed at all.

Now that the plan is ready, we will use the plan on "How to Instruct":

Step Number One—Prepare—The first thing to do in this step is to put the worker at ease—especially mentally at ease. Why is this necessary? As an example perhaps, this particular worker has exaggerated his ability for the job in making his application for employment and now that he is confronted with the problem of doing the job, he may be very nervous and excited. Therefore, before you can possibly impress him with the instructions you want him to observe, you must get him mentally at ease.

Next, find out what he knows about the job—This does not mean the job as a whole, but what does he know about this specific job that is to be done by him.

Third, get him interested and anxious to learn—If he is interested and anxious to learn, he will progress much more rapidly and, perhaps develop a higher degree of efficiency.

Step Number Two — Present—TELL, SHOW, ILLUSTRATE AND QUESTION carefully and patiently. Stress key points — Instruct clearly and completely, taking up one point at a time, but no more than he can master.

CHECK, QUESTION, AND REPEAT—This step should be performed twice at the very least and, perhaps, more as the learner will pick up certain things in the second demonstration that he has missed in the first. We must TELL, SHOW, ILLUSTRATE, QUESTION because telling alone is not sufficient, and showing alone is not sufficient. An estimate of the approximate value of the human senses to retain instructions and information may be explained as follows: 1% for tasting; 1% for feeling; 1% for smelling; 12% for hearing and 85% for seeing. Therefore, when you TELL, SHOW, AND ILLUSTRATE you make use of 97% of his combined senses in putting over your instructions to him.

The third step is PERFORMANCE—Test him by having him perform the job. Have him tell and show you; have him explain the key points asking questions beginning with why, how, what, who, when or where. Observe performance and correct errors; repeat instructions if necessary.

By using the six key words above in asking questions, the learner will have to answer with a complete explanation as a question asked in this manner cannot be answered by a "yes" or "no." The Instructor will not have to assume the learner knows, but judging by his answer, will definitely be sure the learner understands the instruction.

Follow-up Step Number Four: Put him on his own; check frequently; designate to whom he goes for help; encourage questions. Get him used to looking for key points. Taper off extra coaching and close follow-up until he is qualified to work with normal supervision. If this method is followed and adhered to, it will soon prove to supervision and management that it is a most effective tool in getting the worker up to production. It differs from tools of tangible metal and wood whereas the more that you use this tool the sharper and brighter it will get, whereas the metal or wooden tool gets dull and worn over a period of time through use.

When studying the effectiveness

of your Instruction Plan, keep in mind that if the learner is capable of understanding, and he hasn't learned, the instructor hasn't taught.

To me, Job Instruction Training is a "must" for every supervisor, foreman, leadman or anyone giving instructions to others in the plant.

Along with the Job Instruction Training, The Training-Within-Industry's Division of the War Manpower Commission has several other Training Plans or can direct you to the right agency to obtain them such as:

Methods of Induction
Job Instruction Training
Job Methods Training
Job Relations Training
Training of Training Directors
Training of Supervisors
Training of Conference Leaders
Apprenticeship

Should you be interested, write to the following gentlemen requesting the training. If you have any doubt as to your company being eligible for this training, write anyhow and they will obtain a ruling for you:

In Washington and Montana

Mr. Leighton H. Steele,
Training - Within - Industry Division,
War Manpower Commission,
5516 White Building,
Seattle, Washington.

In Oregon and Idaho

Mr. Laurin E. Hinman,
Training - Within - Industry Division,
War Manpower Commission,
1006 Bedell Building,
Portland, Oregon.

General Electric Sets War Production Records

● General Electric Company's 1942 business was the biggest in its history, far above previous records set only the year before. Orders received totalled $2,003,000,000, seventy-seven per cent above 1941's total of $1,32,800,000. Shipments amounted to $1,047,000,000, fifty-four per cent over 1941 and three times the 1935-1940 average. This amount was reduced later in voluntary war contract adjustments by $69,360,000.

Net income available for dividends was $45,082,000, a 21 per cent decrease. A reserve of $17,000,000 was set aside for post-war adjustments. There were 221,608 stockholders on December 31.

The total earnings of employees amounted to $382,039,000 for 1942, compared with 257,400,000 a year earlier. The average number employed during 1942 was 139,939, compared with 109,689 during 1941. Average annual earnings per employee amounted to $2730 in 1942 compared with $2346 in 1941, and were the highest in the history of the company. There were 160,299 employees on the payroll on December 31, including 48,719 women.

Seven Ex-Powell River Men Lost In Air Combat

● More than 6,000 men and women from Canadian pulp and paper mills have gone into the armed services and auxiliaries and many of their names already have appeared on casualty lists.

Many from the Pacific Coast mills have offered their lives in the services and a large number have been casualties. These western mills have given their share.

Five men from Powell River Company, Ltd., all flying officers, have been killed in action. They are Flight Sergeant Lucien Brooks, killed over Malta; Sergeant Pilots Frank McMullan and Jack Woodruff, over Europe, and Pilot Officers William Gilmour and John Morris, over Europe. Two others presumed killed in action are Sergeant Pilot J. W. Daubner, over the North Sea, and Pilot Officer S. P. Marlatt, in Tunis.

Sergeant H. F. Long was wounded at Dieppe and Flying Officer T. Gardiner and Private J. Davenport are reported prisoners.

An outstanding hero from Powell River is Pilot Officer Harry Donkersley, awarded a Distinguished Flying Cross for the sinking of four Italian transports in the Mediterranean. His father, Harry, Sr., is head welder at Powell River.

The Powell River plant has given more than 550 men and women to armed services and auxiliaries, one of the longest honor rolls of any mill anywhere. And this does not include 170 mill men, mostly veterans of the last war, in Powell River's E Company, 2nd Batt., British Columbia Reserve Regiment, commanded by Capt. Leslie Checkland, of the mill wharf staff.

All of these names were listed in the Pulp and Paper Magazine of Canada, which expressed regret that some Canadian mills had failed to send in names in response to requests.

For the Westminster Paper Company, Ltd., of New Westminster, B. C., thirty-three names were on the magazine's honor roll, incluing Sergeant Gordon Navey, RCAF, killed in action overseas.

For the Sydney Roofing & Paper Company, of Victoria, B. C., the names of twenty-two former employes in armed services were listed.

● Twenty-seven were listed from the Vancouver, B. C., converting plant of Pacific Mills, Limited.

One of Vancouver's naval heroes of the war is Lieut. David Killam, son of Lawrence Killam, president of the British Columbia Pulp & Paper Co., who received the Distinguished Service Cross for valor at the Dunkirk evacuation. He was capsized three times in small speedboats by near-misses of German shore batteries. Later he served many months off West Africa in motor launches.

Awarded His Wings

● Delmar C. Johnson was awarded his wings at the aviation navigation school at Hondo, Texas, in February. Johnson had worked during summer vacations at the Camas, Wash., plant of the Crown Zellerbach Corporation. His father, Delmar N. Johnson works there at the present time in the kraft mill.

Young Johnson was made aerial navigator in May, 1942, and during his recent training flew an equivalent of five transcontinental trips.

Camas Men Receive Suggestion Awards

● A substantial financial award was shared by Fred Marks and C. Morasch of the Camas plant of the Crown Willamette Paper Co., Division of Crown Zellerbach Corporation for a suggestion which they had presented jointly.

The idea involved the piling of 9-inch No Waste paper rolls on pallet board and their suggestion was to reduce the number piled on each board from five to four layers high. By this decrease in pallet board load the total truck load is increased by from 25 to 40 rolls of paper. In addition, the suggestion saves space at the converting plant as it permits the rolls to be stacked to greater advantage.

These men had received an original award when the suggestion was accepted and the award mentioned above came as a subsequent estimate of 5% of the savings which the idea would cause in one year.

Another special award was given to Paul Rainey at the same meeting of the suggestion committee for his suggestion that the method of switching rail cars at the beater room platform be done by means of a tram locomotive rather than by using the automatic trucks.

These ideas, and there are many other examples, indicate that men in the pulp and paper industry are putting their minds to additional work to speed up production and aid in production of essential materials.

Towel Machines At West Linn

● Everett Arnold, who was employed in the converting plant of the Camas, Wash., operations of the Crown Zellerbach Corporation, has been transferred to the West Linn, Ore., mill to take charge of towel converting.

The towel converting machines at West Linn were moved there recently from Camas.

Miss Johnson Leaves Bellingham

Miss Wilma Johnson, secretary to Mr. Lawson Turcotte, Vice-President of the Puget Sound Pulp and Timber Company of Bellingham, Wash., has given up her duties with the pulp company and is now with the Navy Department at the Whidby Island base in a similar capacity.

Moves to Lebanon

● A. M. Patterson, of the purchasing department of the Crown Zellerbach mill at Camas, Wash., has been transferred to the Lebanon, Ore., mill to take similar duties there. Mr. Patterson joined the company in 1916 in California and since that time has worked at Portland, West Linn and Camas.

Mrs. Stanley Lewis Passes

● Mrs. Stanley Lewis, wife of the sulphite cook for the Puget Sound Pulp & Timber Company, passed away at a Bellingham hospital on March 26, following a short illness. Mrs. Lewis was active in Puget Pulp Credit Union auxiliary and also in the International Brotherhood of Pulp and Paper Mill Union auxiliary in Bellingham.

Supervisors Work Part-Time At Common Labor Jobs

● Some thirty men from the salried personnel of the Longview Fibre Co. at Longview, Wash., have rolled up the sleeves of their white-collared shirts and are pitching in a total of 640 man hours per week in the box factory of that plant.

This step, voluntary on their part and made to relieve the shortage of labor in this department, is putting supervisors, department heads and others on the salaried payroll out in the plant at common and semi-skilled labor for 18 hours per week in addition to their regular occupations.

They are taking any jobs that need to be done and the orders that go with them. Some muscular adjustments were reported as having been made with accompanying aches and pains but the ranks have been added to, rather than depleted.

This extra work is systematically apportioned out to each of the men who have volunteered so that the man hours are evenly distributed. Shifts of four hours are worked in the evenings and longer shifts worked on Saturdays.

Those who are participating, report it an opportunity to be sought for and hope to gain much in knowledge of production and its problems. The chance to gain perspective of the man on the job is also mentioned as a valuable consideration. To these, obviously can be added the right of these men to feel that they are making an additional sacrifice for the production of essential war materials.

The salaried men will continue to work in the box factory only until such time as hourly workers can be secured to do the work. The plant hourly payroll is working up to maximum capacity and additional help is not available. When this condition is relieved, the salaried men will step out.

Asten-Hill Issues Booklet On Dryer Felt Seams

● "Any type of seam can be used with Asten dryer felts," says the Asten-Hill Manufacturing Company of Philadelphia, makers of asbestos dryer felts, in a new booklet just issued. The booklet titled "Dryer Felt Seams" proceeds to describe the various types of seams employed and the proper method for making each.

Illustrated with detailed drawings are: the outside and inside bootleg seams; the herringbone seam, protected and unprotected; the flat sewed seam; the plain riveted, taped riveted and the three and one riveted seam; the double three and the reinforced riveted seams; the lap glued and the butt glued seams; the Hill clipper and the Asten clipper seams.

The proper methods for applying liquid and strip glues are also pictured along with the method of installing felts equipped with clipper seams. The installation of Asten endless felts on any standard paper machine is likewise pictured.

"We lay no claim to being an authority on the subject of dryer felt seams," says Asten-Hill. "We have merely illustrated what we have seen used by various mills. If you are dissatisfied with your dryer felt seams or are having trouble with them, our men and our experience are at your disposal. We will assist to the fullest extent in the solving of your problem, but we will not favor or definitely recommend that you try or use any particular type of seam, even those that we have pioneered or developed, for we realize that every type of seam has its good points and its bad points, depending upon conditions."

Paper mill or machine superintendents would find it worthwhile to have copies of "Dryer Felt Seams." Copies can be obtained from Asten-Hill Manufacturing Company, Scott's Lane, East Falls, Philadelphia, Pa., from Asten-Hill, Ltd., Valleyfield, Quebec, or on the Pacific Coast from Leonard McMaster, Pacific Coast representative, Pacific Building, Portland, Ore.

USPPA Elects Turcotte; Four Westerners on Board

● Lawson P. Turcotte, executive vice president of Puget Sound Pulp & Timber Company, Bellingham, Wash., has been elected to the executive board of the United States Pulp Producers Association as a director-at-large, succeeding the late Ossian Anderson, former president of the Bellingham company.

Washington state men continue to be well represented on the USPPA board. Robert B. Wolf, manager of the Weyerhaeuser Timber Company Pulp Division, was reelected one of the five regional directors. He represents the West Coast. U. M. Dickey, president of Soundview Pulp Company, and M. B. Houston, vice president of Rayonier Incorporated, were also reelected to the board as directors-at-large. Thus, with Mr. Turcotte, three of the six directors-at-large were from Washington state.

Oliver M. Porter, of New York, was reelected executive director.

Third Son for William Dynes

● It is a boy again in the William Dynes family. "Bill," assistant superintendent of the Pacific Coast Paper Mills of Bellingham, Wash., announced the birth of his son, Charles, on January 9. The little fellow has two older brothers.

Daughter An Army Nurse

● Mrs. Irene McMillan, daughter of George Morris, power plant engineer at the Stockton, Calif., division of Fibreboard Products Inc., has become a second lieutenant of army nurses and is stationed at Fort Ord, Calif.

Fibreboard Men Promoted at Port Angeles Plant

The promotions of the men in this group were announced in last month's issue of PACIFIC PULP AND PAPER INDUSTRY. They are, left to right: BERT SHELLSHEAR, Assistant Night Board Mill Supt.; NELSON HARTNAGEL, Assistant Resident Manager and Chief Chemist; JACK CLAY, Night Board Mill Supt.; HAROLD BIGELOW, Assistant Night Board Mill Supt., and CHARLES F. MEAGHER, Board Mill Supt.

These promotions followed when ROBERT E. BUNDY left the Port Angeles, Wash., plant of Fibreboard Products Inc., to become Vice President and General Manager of Federal Container Company, Philadelphia, a subsidiary of Fibreboard. MR. BUNDY was succeeded as Port Angeles Resident Manager by C. VERNON BASOM, as stated in last month's announcement by N. M. BRISBOIS, of San Francisco, Vice President in charge of all Fibreboard operations.

Paper School Finishes Year Despite Wartime Handicaps

Camas institution kept intact for day when war ends and curriculum may be expanded ✓ ✓ ✓ Studies may include new plastics and forestry techniques ✓ ✓ ✓ Seven young men finish fourth year course and 46 others complete 1942-43 term.

WITH military services drawing heavily from both faculty and student body, that unique educational institution known as the Crown Willamette Paper School has come through one of its most difficult years with flying colors.

This school, which began modestly with a study group in the Camas, Wash., mill of Crown Zellerbach Corporation in 1933, held its tenth commencement on March 10 in Nora Self Hall, Camas. Despite the loss of three professors and many students to the armed services, and further depletion of its ranks by the demands of civilian defense and other civilian wartime activities, the school graduated seven young men who had completed a full four-year course in all phases of the pulp and paper industry—from log selection to sale of the finshed products. Four others finished their third year, eleven their second year, and 31 completed their first year's work.

This was a modest enrollment compared with past years. It brought to 153 the total number of students who have completed the full four-year course. One is Robley Butler, who put in many hours of extra work in order to graduate before joining the navy. Another finished the third-year term by similar zealous application before going into the army. He is Henry L. Ostenson, member of a well-known family in the Camas mill.

Of those who finished the courses this year, 41 were from the Camas mill and twelve from the West Linn, Ore., mill of the Crown Willamette Paper Company, division of Crown Zellerbach Corporation. As in past years, the faculty included experts from outside the mills as well as those drawn from ranks of supervisors, foremen and sub-foremen. And, as customary, the educational technique was as modern and effective as that of any college, having won academic recognition as such from the University of Washington and Oregon State College, which offer full credit for Paper School work to any students who enroll with them.

MRS. HENRY L. OSTENSON, accepting a diploma for her soldier husband from F. N. YOUNGMAN, Vice President of Crown Zellerbach Corp., at the Camas Paper School Graduation ceremonies. At left is A. G. NATWICK, Assistant Resident Manager of the Camas plant and Dean of the School. Another wife who proxied for her husband in receiving a diploma was MRS. ROBLEY BUTLER. He is in the Navy.

New Studies After War

● Perhaps the outstanding importance of this year's school term, carried through under direction of A. G. Natwick, the Dean of the School and Assistant Resident Manager of the Camas plant, was that the institution held together against the day when war will end and new fields of study will open. On that happy day, new techniques in forestry and in the field of plastics are contemplated as part of the curriculum.

With Dean Natwick as toastmaster, a keynote of fellowship and good humor was set for the graduation dinner and exercises, this year. A winter of hard work and sacrifice of time already greatly expended in war and defense work lay behind the students and faculty assembled there, and the program was nicely planned to relax tensions and bring the teacher and the taught together for an appreciative backward look.

One of Dean Natwick's first acts as toastmaster was to introduce members of the Paper School faculty, regents of the School, and guests. Among the latter were Mayor Woodworth of Camas; Joe Ast, president of the local Pulp and Sulphite Workers' Union; J. A. Davis, president of the Papermak-

Crown Willamette Paper School (Fourth Year) Graduation Class of 1943 (left to right): LLOYD M. WEIBLE, RICHARD E. LAWTON, WILLARD S. BOUTWELL, NORVAL J. ASLIN and M. M. GRAHAM. They received diplomas at ceremonies on March 10 in Camas, Wash. Absent because of his enlistment in the Navy was ROBLEY A. BUTLER, also of this class.

ers' Union; Jack Litzer, president of the Camas Chamber of Commerce, and Earl Cole, president of the Camas Lion's Club.

J. E. Hanny, resident manager of the Camas Mill of the Crown Zellerbach Corporation and Regent of the Paper School, was introduced and addressed the group briefly. Mr. Hanny called attention to the fact that, though the numbers of those graduating at this tenth annual exercise were less than in many times past, the quality of work was better. The grades, he said, were higher than the average.

Mr. Hanny mentioned the sacrifices of time made by the women students, with homes and families and their mill work, and the Paper School work in addition. Men students, with long hours at the mill, some of them with small farms, many with defense activities calling for extra and odd hours of time were also commended. Mr. Hanny mentioned, particularly, the efforts of the men from West Linn who had pooled gas and transportation to make the 70-mile round trip to Camas so many times during the past winter.

Mr. Hanny closed by offering congratulations to the graduates:

"You're a swell bunch," he said, "I hope that what you have gained will benefit you in years to come."

119 In Armed Services

Dean Natwick read congratulation letters from J. D. Zellerbach, president of Crown Zellerbach Corporation; Harold Zellerbach, president of the Zellerbach Paper Company, and Albert Bankus, vice-president of the Crown Zellerbach Corporation and Regent of the Paper School. A wire from Lt. (j.g.) J. G. Francis W. Flynn (U. S. Navy) was also read. Mr. Flynn is a member of the Paper School faculty and on leave for the duration.

A total of 119 former Paper School students are now in the armed services, Mr. Natwick announced. Thirty-five of these are graduates of the fourth year, and 30 per cent of these men hold the rank of army captain or equivalent, or higher ranks in the services, he said. Sixty-eight are in the army, ten in the army air corps, 29 in the navy, four in the marines, two in the marine air corps, and six in the coast guard.

Introducing Stewart Holbrook, featured speaker of the evening, Toastmaster Natwick recalled that Mr. Holbrook had been a woods worker and logger before becoming an author.

In these pictures are the outstanding students in the First, Second and Third Year Classes of the Crown Willamette Paper School, Camas, Wash., for the 1942-3 term.

At top, C. E. BRUNER, Resident Manager of the C-Z plant at West Linn, Ore., and Regent of the School, congratulates First Year Honor Students. Left to right: MR. BRUNER, BEVERLY L. MATTHEWS, FRED J. MAFFIE, PETER M. WILKIE, IVA M. SCHWANZ and CARL A. LORON.

Center group shows J. E. HANNY, Resident Manager of the Camas plant and also a Regent of the School, congratulating Second Year Honor Students. Left to right: MR. HANNY, GEORGE F. GOOD, FRANK HUMM and HAROLD A. TIFFANY. Another Honor Student, not present, was WALTER LOUGHRIDGE.

In lower group MR. BRUNER congratulates Third Year Honor Students. Left to right: MR. BRUNER, MITFORD PERSYN, WILLIAM E. DAMON and EVERETT F. BAKER. Also a Third Year Honor Student but called away by the Army was HENRY L. OSTENSON.

Mr. Holbrook entertained his audience with anecdotes and philosophy, told with the salty humor and man-language which characterizes his writings.

The "two magic twins, cellulose and lignin," are bringing the problems of the forest industries more closely together, he stated. The pulp and paper industry, said Mr. Holbrook, is leading in gaining technical knowledge of these wood elements through the work of their laboratories and by their training

of men and women in this technology.

Mr. Holbrook pictured the war as being fought principally by technical experts, and closed his address by stating that the future of the forest industries lay in the hands of such groups as the one assembled at this exercise.

Mr. Youngman's Address

Frank N. Youngman, vice-president of Crown Zellerbach Corporation, addressed the gathering, saying that from time immemorial people have tried to better themselves, and that the graduates of the 1943 Paper School were following a natural desire to improve their lot.

Mr. Youngman made a distinction between the graduates assembled and those of a college or university. He felt that Paper School graduates were more in the nature of graduate students receiving their master's or doctor's degrees in paper making. They had earned their baccalaureate degrees in the school of experience, and the Paper School is their post-graduate work, he said.

In debating what he would advise the class if it were a college graduation, Mr. Youngman said he decided that he would advise them to take pains in choosing the organization with whom they went to work. A progressive organization is careful in examining prospective personnel, and the graduate should be equally careful in making his choice.

Mr. Youngman then passed out diplomas to students completing the four classes. The complete list follows:

First Year Class:

Richard H. Adams*, Fay Barthelemy, Francis R. Benfield*, Wilbur M. Brunell*, Helen Cassel, Frances Cassel, Mary A. Dole, Joel L. Edwards, Florence E. Ginder, Lena Grobli, Gerhard R. Jaffe.

Pearl E. Jones, Helen R. Keist, Fred J. Maffie*, Beverly L. Matthews, William M. McGill, F. M. Mighells*, Gordon E. Nast*, Geneva Persons.

Lora A. Phillips, Charles D. Phillips, Lee Verdell Ragsdale, Viola Rains, Lena L. Rogers, Florence Ross, Iva M. Schwanz, Margaret R. Whipple, Peter M. Wilkie and Edward M. Wurtz*.

Second Year Class:

Joseph Brazney*, Delmar F. Gehlen, George F. Good, Frank Humm, Fred Hungate, Robert B. Kirkwood, Walter A. Loughridge, Glen Scharback*, Harold A. Tiffany, Harold Tuttle and Alfred P. Young*.

Third Year Class:

Everett F. Baker, William E. Damon, Henry L. Ostenson and Mitford R. Persyn*.

Fourth Year Class:

Norval J. Aslin, Willard S. Boutwell*, Robley A. Butler, Clinton A. Dobson, M. M. Graham*, Richard E. Lawton and Loyd M. Weible.

*West Linn students. All others were of the Camas mill.

Prizes Awarded

Mr. Holbrook presented the scholarship prizes and honors. The prizes were as follows:

First Year Students: The first prize, a copy of "Modern Pulp and Paper Making," by G. S. Witham, Sr., was given to Beverly L. Matthews. Second prize, a year's subscription to PACIFIC PULP AND PAPER INDUSTRY, was awarded to Fred J. Maffie. Honorable mention was awarded Peter M. Wilkie, Carl A. Loron and Iva M. Schwanz.

Second Year Students: First prize was awarded to George F. Good and was a copy of "Modern Pulp and Paper Making," by Witham. Second prize, a year's subscription to PACIFIC PULP AND PAPER INDUSTRY, was given to Frank Humm. Honorable mention was given to Harold A. Tiffany and Walter A. Loughridge.

Third Year Students: First prize, three volumes of "Manufacture of Pulp and Paper," Third Edition, was given to Henry L. Ostenson, and because of his absence in the armed forces, was accepted by Mrs. Ostenson. Second prize, a year's subscription to PACIFIC PULP AND PAPER INDUSTRY, was given to Mitford R. Persyn. Everett F. Baker won honorable mention.

Fourth Year Students: First and second prizes for the fourth year honors were a week's trip to each winner, with all expenses paid, around the northern mills of the organization. Robley A. Butler won top honors, which were received by Mrs. Butler because of his absence in the navy. Second prize went to Willard S. Boutwell. M. M. Graham was given honorable mention. Because Butler will not be able to make his trip until the war is over, Mr. Graham was awarded a trip and was to accompany Mr. Boutwell on the tour of the mills.

Honor students also received an autographed copy of Mr. Holbrook's book, "None More Courageous."

Prizes were also awarded to regents and members of the faculty.

Tour Northern Mills

Word was received later from West Linn that Mr. Boutwell and Mr. Graham completed their tour of the northern mills during the week ending March 27.

They not only visited the Crown Zellerbach Corporation plants at Port Angeles and Port Townsend, Wash., but also the Weyerhaeuser Timber Company's pulp division plants at Longview and Everett, the Longview Fibre Company of Longview, the Soundview Pulp Company of Everett and the Everett Pulp and Paper Company of that city.

Mr. Boutwell is an electrical engineer and Mr. Graham a millwright on the No. 9 paper machine at West Linn. Both spoke enthusiastically of their tour.

Gordon Morseth Goes East As Sulphite Superintendent

● Gordon Morseth, who had full supervision of acid making and cooking operations at the Puget Sound Pulp & Timber Company, Bellingham, Wash., has gone east to take over the position of sulphite superintendent at the Detroit Sulphite Pulp & Paper Company in Detroit.

His new duties at the Michigan plant include supervision of wood handling, of the sulphite pulp mill unit of eight Mitcherlich digesters and of bleaching.

Mr. Morseth is a graduate chemical engineer, having received his degree at the University of Washington in 1937. He went to Bellingham in the same year and spent the first two years as a control chemist, which also included instrument technique and project chemistry. He held his supervisory position since 1940.

GORDON MORSETH, ex-Supervisor of Acid Making, Cooking Operations and Related Problems at Puget Sound Pulp & Timber Company, Bellingham, Wash., became Sulphite Superintendent at Detroit Sulphite Pulp & Paper Company on March 25.

Puget Sound Company Rings Up Pulp Production and Sales Record

Although curtailed in fourth quarter, Puget Sound Pulp & Timber Co. has biggest year in history in 1942 ' ' ' But higher costs and price ceilings reduce profits from operations 34 per cent ' ' ' Taxes take 72% of taxable income as against 65% in 1941 ' ' ' Debt reduced $375,000 in four months ' ' ' Logging business developed.

● Pulp production and sales for the Puget Sound Pulp & Timber Company smashed all previous annual records for that Bellingham, Wash., concern in 1942, even though its operations were considerably curtailed during the fourth quarter.

When 1942 made its entrance, national interest was demanding maximum pulp production. For the first nine months of the year, the Bellingham plant was operated at maximum capacity. Output was 25.67 per cent higher than in the comparable period of 1941. But fourth quarter operations were at about 75 per cent capacity in October and only 50 per cent in November and December. This curtailment was required by the War Production Board as a means of releasing manpower to other essential industries and logs to other war uses.

Sales volume totaled $8,533,484 and production totaled 153,546 tons, highest figures in the company's history. A table on page 22 shows comparisons of these figures with 1941 and 1940.

Other interesting preliminary figures from an informal report to stockholders, subject to audit at the end of 1943:

Net profit in 1942: $878,611, including $176,206 from life insurance carried on the life of Ossian Anderson, late president of the company. This insurance item is not subject to federal income tax. Net profit in 1941: $1,076,206. Less insurance, 1942's profit from operations was 34 per cent below the 1941 figure.

$2.48 Profit Per Share

Net profit per share for 1942 was estimated at $2.48 per share on 326,918 shares of common stock (including 54 cents a share from the life insurance). This compares with $3.08 a share in 1941 and $2.40 in 1940.

Federal income tax provisions called for $1,840,000 or 72.35 per cent of taxable income last year, compared with $2,046,931 or 65 per cent in 1941.

Operating income, before tax provision, amounted to $2,519,175, compared with $3,125,363 in 1941. Lower operating income and net on the record volume of business done in 1942 reflected maintenance of the price ceiling on the company's products while costs rose. The company report said cost of logs rose $3.37 per ton of pulp produced. It cited a wage increase, effective June 1, amounting to 10 cents an hour for employes of more than six months service and 7½ cents an hour for others.

Quoting further from the report:

"Under provisions of the new tax law the Company is entitled to a post war refund of ten per cent of excess profits paid on 1942 income; such ten per cent amounted to approximately $175,500. In lieu of a post-war refund, this credit may be taken immediately to the extent of 40 per cent of debt reduction between September 1 and December 31, 1942. By reducing its debt $375,000 between the dates mentioned, the company effected a tax saving of $150,000 in 1942 under these provisions and will receive an additional post-war refund in the form of government bonds amounting to approximately $25,500."

Log Holdings Developed

● The report said that during the year substantial progress was made in development of the company's newly acquired timber holdings on Vancouver Island. These extend a distance of some sixty miles inland from Beaver Cove into the region of the Nimpkish, Woss, Vernon and Muchalat Lakes.

These holdings cover 131,358 acres, an area of over 205 square miles.

Cruise reports account for 4,430,000,000 feet of timber, described as exceptionally high quality, comprised of 1,949,500,000 feet of fir, 1,513,500,000 feet of pulp species, and 867,000,000 feet of cedar.

Indicating to the laymen the expanse of these timber reserves, if 100,000,000 feet were to be cut annually—considered a large logging operation—it would take more than 44 years to log the entire area, according to the company's report. Meanwhile, with rapid regrowth in the district, a sizable stand of timber would be reproduced for future cutting.

Canadian Forest Products Company and Beaver Cove Company are wholly owned subsidiaries of Puget Sound Pulp & Timber Company and Timber Investment Company is also a subsidiary, owning important timber properties and cutting rights. Englewood, on Beaver Cove, is the Vancouver Island marketing point for the company's timber, 185 miles from Vancouver, B. C., and within 275 miles of Puget Sound mills. Log rafts are towed through inland straits to these mills.

Logging Investments

Puget Sound Pulp & Timber Company acquired late in 1941 sole ownership of Canadian Forest Products Limited and Beaver Cove Timber Company Limited through investment of $2,040,340. Net advances for development work totaled $565,105 on December 31.

Total investment and net advances, amounting to $2,605,450, were provided in this manner: $955,450 out of the Company's working capital, and $1,650,000 through a bank loan which matures serially to October 1, 1946. Notes for $100,000 each were paid on their due dates, April 1 and October 1, 1942, and a note for $125,000, due April 1, 1943, was prepaid in 1942. Thus, the bank loan has been reduced to $1,325,000 and investment from the Company's working capital increased to $1,280,450.

Cutting contracts applying to the Cudahy and Timber Investment tracts do not involve capital investments. Owners of these tracts are paid according to the amount of timber produced on their lands.

In the closing months of 1942, about 30 million feet were cut on Vancouver Island and production around the year-end approximated 5 million feet a month, a figure subject to increase during 1943 provided manpower is available to carry out contemplated plans.

Logging Equipment

● Rolling stock and equipment includes 80 railroad cars and three

PUGET SOUND PULP & TIMBER COMPANY

Operating Summary
1942 Compared with 1941 and 1940

In the following summary, preliminary figures for 1942 are compared with independently audited figures for 1941 and 1940. Although subject to revision when the year-end audit has been completed, these preliminary figures provide a practical basis for comparing results of operations under war conditions with those of previous years.

	1942	1941	1940
Production, tons	153,546	143,038	128,136
Average daily production, tons	433	398	368
Sales, tons	151,149	146,023	126,938
Net sales and other revenue	$8,932,517	$8,379,128	$6,022,583
Operating profit before depreciation	3,026,707	3,556,842	2,054,412
Depreciation	507,532	431,479	221,164
Operating profit after depreciation	2,519,175	3,125,363	1,833,248
Non-recurring profits and write-offs, net	200,384*	*2,254*	*372,695*
Profit before provision for federal taxes	2,719,559	3,123,109	1,460,553
Provision for federal taxes†	1,840,000	2,046,931	665,000
Net profit	879,559	1,076,178	795,553
Net profit per share:			
Excluding insurance item in 1942:			
Preferred Stock	$12.55	$19.20	$12.09
Common Stock	1.94	3.08	2.40
Including insurance item in 1942:			
Preferred Stock	$15.69	-----	-----
Common Stock	2.48	-----	-----

*Includes $176,206 realized from life insurance.
†At the rate of 72.35 per cent of taxable income in 1942, 65 per cent in 1941, and 45.5 per cent in 1940.

NOTE: Italic figures indicate loss.

In a later revision of the operating summary, issued by the Puget Sound Pulp & Timber Company, there were some minor revisions of the above figures for 1942. Net profits were reported as $878,611 instead of $879,559. Net sales and other revenue were $8,533,484 instead of $8,932,517. Profits before revision for taxes were $2,718,611, instead of $2,719,559.

locomotives, four logging trucks and one dump truck, five diesel tractors, five gas and diesel boats, seven gas and steam donkey engines, a gas shovel, a portable sawmill, a well-equipped machine shop, portable camps suitable for 200 men, and numberless other items of equipment found in a complete logging operation.

During 1942 the railroad was completely rebuilt; three miles of truck road were built at the upper, or southern, end of Nimpkish Lake, a camp was established, and logging commenced in the latter part of the year.

Another railroad is projected, extending from upper Nimpkish Lake to open up the area along the Nimpkish and Davie Rivers. Roadbed was graded for 5½ miles during 1942; the remainder of the route has been surveyed.

Plans for 1943 call for completion of a portion of this new railroad, for which sufficient steel is on hand. Logging in this newly developed area should increase total production by 3 to 5 million feet per month, provided manpower is available.

Canadian Embargo Eased

In January, 1943, the Canadian Timber Controller announced that the embargo on shipment of logs to the United States would be lifted to the extent that exports of pulp specie logs will be permitted in 1943. Under this ruling it is possible that a fairly substantial amount of Canadian logs may become available to Puget Sound pulp and lumber mills during 1943.

Proposed modification of the embargo, which was 100 per cent effective beginning in September, 1942, should prove advantageous to the company, both in operations at the Bellingham plant and in the marketing of timber from Vancouver Island holdings of its subsidiaries.

The company's report said:

"Reconstruction following World War I created heavy demands for lumber products, which resulted in the longest sustained period of good markets the industry had experienced in 50 years. Recurrence of this situation after the present war seems most likely."

Puget Sound Pulp Dividend

● Puget Sound Pulp & Timber Co. has declared the regular quarterly dividend of 30 cents a share on 6% cumulative preferred, payable April 1 to stock of record March 18.

Blessings' Blessed Event

George Blessing, office manager of the Coos Bay Pulp Corporation at Empire, Ore., and Mrs. Blessing, have welcomed the first addition to their family, a son, George Leighton Blessing, born March 11.

Lieut. R. E. Chase, Jr., Stationed In Maine

Lieut. Roger E. Chase, Jr., formerly in charge of the Portland, Ore., office of R. E. Chase & Company (Tacoma Bldg.), Tacoma, Wash., representative of pulp and paper mill equipment companies, is now stationed at the Air Transport Command, Hangar 2, Army Air Base, Presque Island, Maine, in an executive capacity.

Lieutenant Chase took special training in New York after obtaining his commission in January, at the officers' school, Miami Beach, Fla. After enlisting as a private last May, he was stationed successively at Fort Lewis, Spokane, El Paso, and Tucson before going to Miami Beach.

A graduate of Columbia University, Lieutenant Chase was editor of the daily college newspaper, "The Spectator," while there. During the recent Spanish Civil War, he was executive secretary of Medical Relief of the Spanish Republic.

Mill Employe In WAACS

● First woman to join the WAACS from the staff of the Pacific Coast Paper Mills of Bellingham, Wash., is Miss Ethel Stowe of the converting department. Miss Stowe said good-bye to her fellow workers on March 8, just before entraining for Des Moines, Iowa. She is the thirty-sixth employe of the paper mill to join Uncle Sam's armed services.

Fibreboard Service Awards

● Recent awards of service pins at the Vernon, Calif., division of Fibreboard Products Inc., went to the following employes:

For 15 years: To Ed Hall, C. Walder and O. M. Johnston.

For ten years: To H. Johns and Chester Howlett.

Jacoby a Second Looey

● Bernard J. Jacoby, on leave from Crown Zellerbach Corp., Camas, became a second lieutenant at graduation exercises of the chemical warfare school at Edgewood arsenal, Maryland, January 23.

Harry D. Bean Resigns As Seaboard's Manager

● Harry D. Bean, well known veteran in the paper industry in California, has resigned as manager of Seaboard Paper Company, San Francisco, a positon held since organization of the company four years ago. Mr. Bean, former manager of the General Paper Company, before that concern was absorbed by the Zellerbach Paper Company, will enjoy a well-earned vacation before announcing plans for the future.

J. Paul Paganini, also with Seaboard since its organization in the capacity of office manager, has been promoted to the position of general manager, and assumed his new duties the first of March.

Effective at the same time, Seaboard took over the paper division of the T. J. Cardoza Company, Ltd., San Francisco bookbinders, and Frank B. Yerby, manager of the division, is joining Seabord as sales manager. Before going to Cardoza three years ago, Mr. Yerby was with the San Francisco offices of Blake, Moffitt and Towne.

Further expanding their line, Seaboard has just been named exclusive Northern California distributor for "Escort," a 50 per cent rag bond, manufactured by the L. L. Brown Paper Company.

Soundview Pulp Company Shows Profit Decline as Costs Rise

Production and sales for 1942 are slightly below 1941 ' ' ' Costs were soaring while prices were frozen to ceiling ' ' ' Everett, Wash., plant shows effect of log shortage ' ' ' Nets $2.30 a share on common stock.

● Soundview Pulp Company reporting on 1942 operations which were reduced to less than 75 per cent of capacity during the final three months by lack of log supply, showed net profits approximately 30 per cent below those for 1941.

Demand for bleached sulphite pulp exceeded supply throughout the year and permitted full production until October 1. Shortage of logs then resulted in allocation of the supply to pulp mills by the WPB and reduced production. Costs were higher, but prices were frozen to the 1941 level.

Production for the year was 179,237 tons against 189,046 tons a year earlier.

Independently audited report of the company and subsidiaries shows net profit of $1,246,987 for the year ended December 31, 1942, after all charges, equal to $2.30 a share on 488,250 shares of common stock outstanding after regular dividends of $126,195 on 21,075 shares of $100 par value of 6 per cent preferred. This compares with net of $1,794,006, or $3.42 a share on common in 1941.

Cost of Goods Increase

Sales last year were $12,107,751 against $13,019,411 a year earlier. Cost of goods increased to $8,301,987 from $8,016,537 in 1941. Federal income and excess profits taxes amounted to $2,685,000 against $3,020,000 in the previous year. A post-war credit of $214,000 was deducted from 1942 tax provision.

The company spent $273,946 for timber and timberlands last year, adding materially to its supply.

Working capital position was improved during the year although cash was less by more than $2 million, due to purchase of U. S. Treasury tax series notes. Current assets at the year-end amounted to $2,688,778 and current liabilities $1,484,642, leaving working capital of $1,204,137. This compares with current assets of $4,554,738 and current liabilities of $3,651,248 and working capital of $903,530 at the end of 1941. Report includes operation of Lyman Timber Co., subsidiary.

For January, 1943, Soundview has reported net of $60,285 against $70,930 in the like 1942 month.

Ridgeway Named to Pulpwood Advisory Committee

● In a move to provide more representation from the Pacific Northwest, James Ridgeway of Soundview Pulp Co., Everett, Wash., has been added to the Pulpwood Advisory Committee of the Pulp and Paper Division of the War Production Board, which holds periodic meetings in Washington, D. C.

He will serve from the Northwest with Irving T. Rau, St. Helens Pulp and Paper Co., St. Helens, Ore.; Walter de Long, St. Regis Paper Co., Tacoma, and D. S. Denman, Seattle, Vice President, Crown Zellerbach Corporation.

R. M. Buckley Joins Soundview Pulp Company

● R. M. Buckley of Tacoma resigned from the War Production Board on March 1 and joined the Soundview Pulp Company of Everett, Wash. Mr. Buckley will represent the Soundview Pulp Company in its various eastern activities. A portion of his time will be spent on the Pacific Coast.

Mr. Buckley has been with the War Production Board in Washington, D. C., for over one year, serving in various capacities. Starting with an assignment on kraft pulp, he later became assistant to the Chief of the Pulp and Paper Branch. Subsequent positions with the War Production Board included assistant to the Deputy Director General of Industry Operations.

Prior to Mr. Buckley's positions in Washington, he was associated with St. Regis Paper Company, Kraft Pulp Division in Tacoma.

SOUNDVIEW PULP COMPANY

1942 Compared with 1941 and 1940

Consolidated income account of Soundview and subsidiaries for the year ended December 31, 1942, compares as follows:

	1942	1941	1940
Net sales	$12,107,751	$13,019,411	$11,502,377
*Costs and exp. of sales	8,301,987	8,016,537	7,607,070
Gross profit	$3,805,764	$5,002,874	$3,895,307
Other income (net)	126,511	30,236	18,681
Other expense	214,289	219,103	221,994
Federal income taxes	545,000	805,000	885,000
Excess profits tax	2,140,000	2,215,000	985,000
Post-war refund, estimated	214,000		
Net profit	$1,246,987	$1,794,006	$1,821,994

*Includes provision for depreciation, depletion and amortization of $962,792 in 1942, $839,719 in 1941 and $740,006 in 1940.

Independently audited consolidated balance sheet of Soundview Pulp Company and subsidiaries, as of December 31, 1942, compares as follows:

ASSETS

	1942	1941	1940
Cash	$223,654	$2,336,506	$1,133,065
Accounts receivable	1,005,447	1,002,952	906,562
Advance to logging contractor	41,845	72,972	25,008
Inventories	1,417,832	1,142,308	1,055,496
Total current assets	$2,688,778	$4,554,738	$3,120,131
Inventory and advance to subs.	610,158	227,601	101
Process right	7,725	10,300	12,875
Capital assets	9,009,045	9,481,982	9,296,814
Deposits on timber option	28,352	28,222	24,521
Deferred and prepaid items	29,474	93,005	90,078
Total assets	$12,373,533	$14,395,847	$12,544,520

LIABILITIES

Accounts payable	$312,210	$311,544	$393,634
Salaries, wages accrued	72,243	68,737	43,235
Timber purchase contract		7,723	
Taxes accrued	*1,048,188	3,263,245	2,056,693
Total current liabilities	$1,484,641	$3,651,248	$2,483,561
Preferred stock	2,107,508	2,107,508	2,107,508
Common stock	2,441,250	2,441,250	2,441,250
Capital surplus	3,896,831	3,896,831	3,896,831
Earned surplus	2,443,302	2,299,643	1,607,647
Total liabilities	$12,373,533	$14,395,847	$12,544,520

*In 1942, reserve for federal income and excess profits taxes, $2,698,435, less $1,807,920 U. S. Treasury Notes, Tax Series B.

Hawley Company Earnings Down Although Sales are Near Record

Operating costs increase and price ceilings restrict profits despite only ten per cent drop in sales ... President Smith reports 1943 outlook uncertain due to war curtailment prospects, lack of manpower and effects of disastrous floods.

● Due mainly to increased operating costs, wartime price ceilings and losses in timber operations, the profits of the Hawley Pulp & Paper Company of Oregon City, Ore., for 1942, showed a decline of approximately 68 per cent from the 1941 figure.

Sales and production were off less than 10 per cent, but the net profits dropped from $443,749 to $142,002.

Net sales last year were $5,369,590, compared with $5,630,925 in 1941, when the company operated at capacity and set records for production and sales.

John H. Smith, president, reported to stockholders that the outlook for 1943 is very uncertain, due not only to possible restrictive governmental regulations and shortages of manpower and supplies, but also to flood damage on January 2, this year, which seriously crippled the mill's operations. This already has resulted in a substantial operating loss, with prospect that the same condition may obtain for at least a few more months.

The company, which manufactures newsprint, manilla and sulphite wrapping paper and paper specialties, paid $332,000 in dividends last year, including dividends on the $6 second preferred stock for three years ended December 31, as well as for 1942, which were charged to initial surplus, in the amount of $189,998, by which dividends paid exceeded net profit for the year. This reduced initial surplus to $1,146,702, from $1,336,699 in 1941 and $1,415,494 at the end of 1940. Last year's earnings amounted to $7.10 a share on the 8,000 shares of $7 dividend first preferred outstanding.

A total of $770,000 was set aside for 1942 federal and state income taxes. This compared with $824,461 set aside for taxes in 1941.

HAWLEY PULP & PAPER COMPANY
1942 Compared With 1941 and 1940

Independently audited income account compares as follows:

	1942	1941	1940
Net sales	$5,359,590	$5,630,925	$4,757,088
Cost of sales	3,644,314	3,733,861	3,116,561
Profit on sales	$1,715,276	$1,987,064	$1,640,527
Selling and admin. exp.	343,219	355,069	285,765
Operating income	$1,372,057	$1,541,995	$1,354,762
Other income	27,485	29,392	33,560
Total income before charges	$1,399,542	$1,571,387	$1,388,322
Depreciation, amortization, depletion	504,606	272,217	276,513
Interest, discount and bond expense			45,540
Loss, disposition of assets		6,118	52,481
Other charges	67,869	96,842	70,754
Income taxes	685,065	752,461	506,628
Net profit	$142,002	$443,749	$436,406

Independently audited balance sheet, as of Dec. 31, 1942, compares as follows:

ASSETS

	1942	1941	1940
Cash	$144,953	$603,801	$58,875
U. S. Treasury notes, tax series	450,000		
U. S. Savings bonds	7,631		
Accounts and notes receivable	523,806	608,506	565,774
Inventories	986,391	839,629	1,211,027
Total current assets	$2,122,782	$2,051,939	$1,835,676
Cash value life insurance policies	23,843	11,076	7,168
Post-war refund excess profit tax	60,000		
Buildings, machinery & equipment, net	1,678,150	1,873,175	2,081,450
water rights, plant sites, etc.	1,078,378	1,089,112	1,098,348
Timberlands	1,484,007	1,712,488	1,759,473
Magnesite leasehold	7,666	7,666	7,666
Deferred charges	91,017	100,781	73,208
Total assets	$6,535,841	$6,846,238	$6,862,789

LIABILITIES

Accounts payable	$187,563		
Accrued wages, etc.	149,084	159,544	150,594
Dividends payable Jan. 2	47,000	35,000	
Accrued income taxes	777,000	846,000	504,000
Other taxes accrued		82,250	82,024
Total current liabilities	$1,160,647	$1,281,046	$901,346
Reserve for hospital fund	10,113	10,113	10,113
*Stated capital	4,116,092	4,116,092	4,116,092
Initial surplus	1,146,702	1,366,699	1,415,494
Donated surplus	102,288	102,288	102,288
Earned surplus			317,456
Total liabilities	$6,535,841	$6,846,238	$6,862,789

*Represented by 20,000 shares $7 cumulative first preferred of no par value; 8,000 shares of $6 cumulative second preferred, no par value and 200,000 shares of $1 par value common.

"Scotchy" Campbell Joins Leathernecks As Captain

● Ready to buck enemy lines on the battlefront with the force and ferocity which won him fame on the gridiron, J. D. ("Scotchy") Campbell has joined the Marines. He is on leave from the Crown Zellerbach Corp., San Francisco, where he was an assistant to F. A. Drumb, director of industrial and public relations.

"Scotchy" has been commissioned a captain in the U. S. Marine Corps, and left March 11 for San Diego to report for duty. He was honor guest at a farewell reception arranged by co-workers on the eve of his departure.

Captain Campbell was a football hero while attending Stanford University, and was captain of the team for two seasons. After being graduated he served as assistant superintendent of the Western Wax plant in Oakland before joining the industrial relations department of Crown Zellerbach.

Stockton Man Goes In Army

● Woodrow Leavick, on leave from the sales department in the Stockton division of the Zellerbach Paper Company, has successfully passed the examination and been commissioned a Lieutenant in the Army. He was a recent visitor in San Francisco en route to Marsh field to report for duty.

Don Johnson In Navy

● Don Johnson, credit manager for Fibreboard Products Inc., San Francisco Division, has been commissioned a Lieutenant (senior grade) in the Navy and left the latter part of February to report for active duty.

St. Regis Company's Production Is Mainly for U. S. War Effort

R. K. FERGUSON, President, tells of products for military and civilian use ' ' ' Income shows drop from 1941 figure, with 1942 net earnings at $1,680,091 ' ' ' Walter DeLong joins directors of parent firm.

● St. Regis Paper Company and subsidiaries, in a report issued in New York at the executive offices, announced a 1942 net income of $1,680,091, equal to $39.04 a share on 7 per cent Preferred on which dividend arrears were $70 a share at the close of the year. Allowing for annual dividend requirements on Preferred, balance of earning was equal to 33 cents a share on Common.

In 1941, net income was $3,228,080, or $74.79 a share on Preferred, and 71 cents on Common. Provision for income and excess profits taxes was $1,343,752 against $2,018,891 in 1941.

In his statement to stockholders, R. K. Ferguson, the president, stated:

"The management recognizes that the continued improvement in the financial position of the company indicates the desirability of formulating a recapitalization plan to clear up the arrears of dividends on the company's preferred stock. Nevertheless, because of certain unsettled matters, including among other things, applicable tax laws and the shutdown of the kraft mill at Tacoma, Wash., which affects such a plan, the management believes that it is in the best inerest of the stockholders to await a clarification of those matters before presenting such a recapitalization plan."

Other excerpts from his report follow:

"Net sales, royalties and rentals amounted to $28,862,702.82 in 1942, in contrast with $30,000,159.51 for the year 1941. Cost of sales, selling, administrative and general expenses were $22,842,036.38 in 1942 against $22,527,255.64 in 1941. Higher costs of raw materials, wages, etc., generally prevailed throughout the industry in 1942. Provision for depreciation was increased to $1,270,818.45 from $1,149,030.79 in the prior year. Operating income equalled $4,749,847.99 in 1942 against $6,323,873.08 in 1941. Other income credits reached $700,547.26 against $105,691.78 in 1941. The higher income credits in 1942 resulted chiefly from an item of $603,206.04, the excess of proceeds of life insurance policies over cash surrender value.

ST. REGIS PAPER COMPANY
AND SUBSIDIARIES
Consolidated Income Summary for 1942 and 1941

	1942	1941
Net sales, royalties, and rentals (including sales to associated company)	$28,862,702.82	$30,000,159.51
Costs and expenses:		
Cost of sales, selling, administrative, and general expenses	$22,842,036.38	$22,527,255.64
Provision for depreciation	1,270,818.45	1,149,030.79
Total	$24,112,854.83	$23,676,286.43
Operating income	$4,749,847.99	$6,323,873.08
Other income credits:		
Dividends on investments	$8,862.33	$23,693.13
Rental property income, less expenses	13,958.38	14,829.02
Excess of proceeds of life insurance policies over cash surrender value per books	603,206.04	----------
Other	74,520.51	67,169.63
Total	$700,547.26	$105,691.78
Gross income	$5,450,395.25	$6,429,564.86
Income charges:		
Interest	$57,128.69	$169,719.20
Loss on retirement of property, equipment, etc.	1,223,669.17	341,183.83
Amortization of net asset value of facilities at Tacoma under Certificates of Necessity at shutdown, November 1, 1942	914,485.76	----------
Provision for reserve for contingencies	150,530.32	----------
Loss on sale of 341,666 shares common stock of The United Corporation—excess of restated value as approved by the stockholders over proceeds of sale	----------	385,412.67
Provision for loss on investments and accounts in enemy-occupied countries	----------	183,672.53
Other	38,550.19	58,143.72
Total	$2,384,364.13	$1,138,131.95
Net income before provision for income and excess profits taxes	$3,066,031.12	$5,291,432.91
Provision for income and excess profits taxes:		
Federal:		
Income taxes (no provision required in 1941)	$898,000.00	----------
Excess profits tax (1942, less post-war refund of $14,000.00)	127,000.00	1,800,000.00
Canadian and other foreign (1942, less Canadian post war refund of $27,027.03)	318,752.12	218,891.32
Total	$1,343,752.12	$2,018,891.32
Net income for the year	$1,722,279.00	$3,272,541.59
Less—Dividends on preferred stock of subsidiary	42,187.50	44,461.50
Net income applicable to parent company	$1,680,091.50	$3,228,080.09

Note: The equity of the Company in net income of foreign subsidiaries not consolidated and foreign associated companies, exclusive of investments in enemy-occupied countries written off to income in 1941, exceeded dividends received from such companies by approximately $200,000 in 1942 and $82,000 in 1941.

Parts Made for Bombsights

"The company's production in 1942 was predominantly for the war effort and civilian requirements. In the multiwall bag division many new commodity markets were developed by reason of the shortage of fabrics and curtailment of metals and wood for packaging. Besides supplying the requirements of the standard rock products field, expanded multiwall bag uses occurred in packaging the following commodities: Flour, sugar, salt and many other foodstuffs, as well as a wide variety of chemical products. An integral part of the increased use of multiwall valve bags has resulted in a greater demand for packaging and filling machines built at the company's machine division in Oswego, New York. The use of these machines enables substantial savings of manpower, metals and fabrics. The machine division is also manufacturing parts for recoil mechanism, bombsight and other items essential to the war effort.

"The panelyte division, in normal times an important supplier of laminted plastic products for domestic refrigerator manufacturers and others, has been converted entirely to war work. This division now manufactures baffles, pushrod housings and other airplane parts; also laminated plastic stock in sheets for lend-lease, and for the United States Army and Navy for use in tanks, ships, submarines, etc.

"In the groundwood paper division of the company the war economy is demanding the greater utilization of groundwood grades of paper in order to obtain the maximum amount of wood fibre from a unit of wood in contrast with paper using larger percentages of chemical wood fibre. The production of a number of new groundwood grades has characterized the operations in this division during the past year.

"Thus the war economy has directed the productive resources of the company toward new and additional markets due to shortage of competitive packaging materials, need for conservation of raw materials and accelerated activity in aviation. There is every likelihood that many of these new markets will be retained in the post-war period, supplementing those markets which are already established.

"In the autumn of 1942, the log situation in the Pacific Northwest became acute by reason of the shortage of manpower and the restriction on export logs from British Columbia to the United States. As a result of this log shortage, War Production Board declared the Puget Sound district a critical wood area in order to protect certain vital war production requirements of woodpulp. Under the plan developed, certain mills were closed and others placed on a curtailed basis of operation. The company's kraft pulp mill at Tacoma, Wash., with an annual capacity of 110,000 tons, was one of the mills closed as a result of this action."

All officers were re-elected, and Walter DeLong, vice-president of the company in charge of the kraft pulp division in Tacoma, became a new member of the board of directors, as was announced in these columns last month.

Three Brothers In Navy

● The Geiger sisters at the Pacific Paper Board Company in Longview are entitled to wear several service stars. They have three brothers in the navy. Last June, Valma Geiger married Lieut. Tobiasson, in the personnel division of the Army. Miss Fern Geiger is secretary to E. E. Flood, president.

Rayonier Incorporated Nine Months' Profits Drop

● Rayonier, Incorporated, and its wholly owned subsidiaries, report for the nine months ended January 31, net profit of $1,537,623, equal after preferred dividends to 62 cent a share on 963,871 shares of common stock outstanding. This compares with $2,697,826, or $1.82 a share on common for the like period of the preceding fiscal year.

Production in the 1943 period totaled 273,750 tons, as compared with 286,680 tons for the corresponding period a year ago. Sales totaled 273,906 tons, as compared with 300,846 tons a year ago.

Crown Zellerbach Sales Rise; Profits Drop In Nine Months

● Crown Zellerbach Corporation and it subsidiaries report for the nine months ended January 31, 1943, first nine months of the current fiscal year, consolidated net profit of $5,327,483 equal, after preferred dividends, to $1.48 a share on 2,261,199 shares of common stock outstanding.

This compares with $7,528,819, or $2.45 a share of common, for the like period of the preceding fiscal year, which amount varies from that previously published because of the elimination of a provision for Canadian provincial taxes on income not required.

Net sales of the corporation and its subsidiaries, including sales of purchased merchandise, amounted to $62,055,517 for the nine months ended January 31, 1943, as compared with $64,267,768 for the corresponding period of the preceding year.

Profit before deduction of taxes on income totaled $10,619,522, as compared with $13,979,910, a decrease of 24 per cent.

The provision for United States government and Canadian taxes on income for the nine months ended January 31, 1943, totaled $5,245,099 without deduction for postwar refunds, which aggregated $205,783. The provision for such taxes for the corresponding period a year ago was $6,382,561.

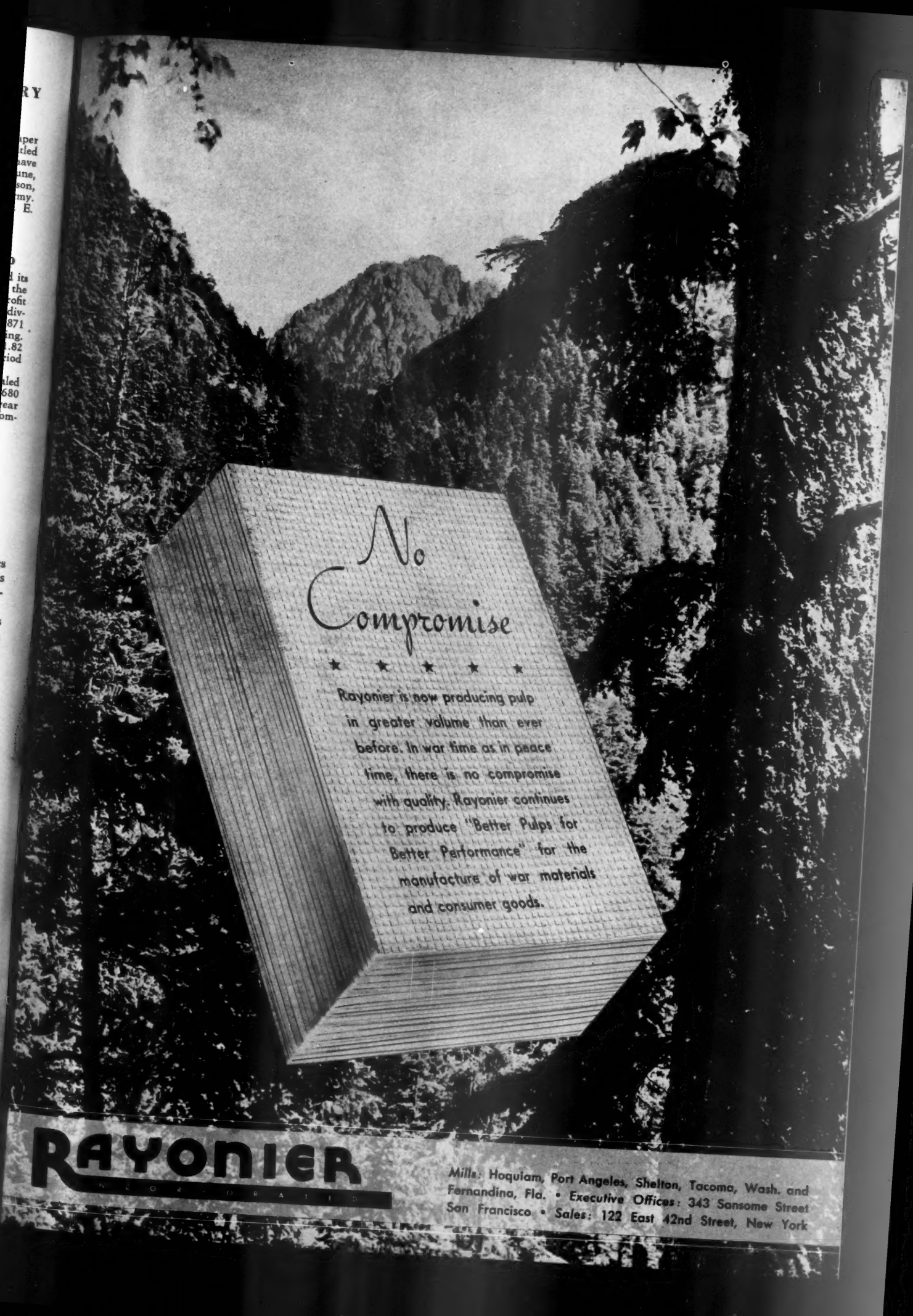
Despite the decease in net sales, cost of goods sold during the nine months ended January 31, 1943, which amounted to $42,936,784, increased $730,679 compared with the corresponding period last year.

Net profits for the three months ended January 31, 1943, was $1,733,435, equal to 48 cents a share of common stock as compared with 50 cents a share in each of the two preceding quarters of the current fiscal year.

Sales and earnings of Crown Zellerbach Corp. and subsidiaries, by quarters, compare as follows:

Quarter ended:	Sales	Net profit	Per share common
Jan. 31, 1943	$20,779,763	$1,733,435	$0.48
Oct. 31, 1942	20,896,323	1,790,901	.50
July 31, 1942	20,379,431	1,803,147	.50
Apr. 30, 1942	*22,061,538	‡3,776,588	†—
Jan. 31, 1942	22,483,516	2,856,253	.97
Oct. 31, 1941	21,826,619	2,224,233	.69
July 31, 1941	19,964,477	2,251,726	.70
*Apr. 30, 1941	15,225,647	2,417,733	.78
Jan. 31, 1941	16,967,737	2,118,689	.64
Oct. 31, 1940	16,928,043	2,085,550	.63
July 31, 1940	17,094,969	2,244,315	.70

*Indicated. †Not directly comparable. ‡Includes year-end adjustments, net credit of $974,655, of which $530,000 excess provision for income taxes.


No Compromise
★ ★ ★ ★ ★
Rayonier is now producing pulp in greater volume than ever before. In war time as in peace time, there is no compromise with quality. Rayonier continues to produce "Better Pulps for Better Performance" for the manufacture of war materials and consumer goods.
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War Causes Decline In B. C. Company Earnings

● War conditions resulted in a sharp decline in the operations and earnings of British Columbia Pulp & Paper Company, with mills at Woodfibre and Port Alice, B. C., according to the annual report of President Lawrence Killam.

The statement, covering the period ending December 31, 1942, shows net operating profits at $1,722,983, compared with $3,292,691 in 1941, and with $2,308,655 in 1940. Net profit after bond interest, taxes and write-offs is shown at $241,981 against $601,160.

Reviewing the progress of the year, Mr. Killam stated: "Although increased plant capacity was available, the actual production was below that of either of the previous years, due to shortage of materials, and the necessary replacement of a large proportion of employees. Costs of operation have continued to increase, while selling prices have remained generally unchanged."

Mr. Killam reported that interest on the company's six per cent first mortgage gold bonds was paid in full last year.

A meeting of the holders of the seven per cent general mortgage sinking fund gold bonds was held in Montreal last November, and pursuant to an extraordinary resolution passed at that time all arrears of interest to the first of May, 1942, were discharged by funding and cash payments, and interest, which was originally to fall due on November 1, 1942, to May 1, 1945, inclusive, was postponed and made payable on November 1, 1945, with the right to the company to make prepayment from time to time.

To provide for the funding payments, $489,400 additional seven per cent general mortgage bonds were issued.

Seven per cent general mortgage bonds to the value of $180,000,000 held by the company were cancelled in lieu of sinking fund payments for the years 1942, 1943 and 1944.

No dividends on preferred or common shares were paid.

During the year $1,839,751 was paid on account of previous and current income and excess profits taxes. A reserve of $420,000 was provided in the accounts for 1942 to cover income and excess profits taxes, and the statements of the company are still subject to adjustment pending decision of the tax liability accrued in each of the years 1940, 1941 and 1942.

Additional reserves for the year include provision for depletion of timber limits to the amount of $2,628; depreciation of properties, $580,000 and future depreciation in inventory values, $138,028.

Net balance sheet at the end of 1942 shows inventories at $1,458,752 compared with $1,392,186 one year previously. Accounts receivable were $1,322,415 against $1,119,108, and cash $33,566 against $526,333. Dominion of Canada Victory Loan (market value $437,532) was held to the amount of $440,750, whereas no funds were reported in Victory Loan at the end of 1941. Total current assets were $3,255,383 against $3,037,616.

Current liabilities total $1,599,752, indicating net current assets of $1,655,631, compared with $968,679 at the end of 1941. Current liabilities included $626,449 in bank demand loan and overdrafts (secured); $591,273 in accounts and wages payable; $210,687 in 7 per cent bond interest payable January 2, 1943; $31,191 bond interest accrued; $36,573 taxes other than incomes taxes, and $103,578 reserve for income and excess profits taxes.

Superintendents Group Will Meet In New York City

● The national convention of the American Pulp and Paper Mill Superintendents' Association will be held at the Commodore Hotel in New York City June 15-17. The meeting will be featured by a program designed to aid in the war effort.

These plans were formulated at a meeting of the Board of Trustees which was held at the Commodore Hotel, February 16.

The highlights of the annual convention will include an exhibit of paper, paperboard and paper products to show how paper is helping to win the war, the discussion of problems facing the pulp and paper industry as a result of the war by outstanding representatives of the war agencies, and a discussion of the important labor problems facing the industry.

The "Paper and the War" exhibit will be staged by the industrial affiliates committee which arranged the successful Maintenance and Conservation Forum held at the national convention of the Superintendents Association last year.

The group meetings which will be held will be featured by round table discussions of processing and maintenance problems. The superintendents and other operating men, as well as representatives of the allied industry, will be invited to attend and take part in these discussions at the various group meetings. Questions and answers on practical processing and maintenance problems will be taken up at the various group meetings and it is planned that both questions and answers will be published in booklet form.

Coos Bay Pulp Corp. Goes Over Top In Bond Sale

● Employes of the Coos Bay Pulp Corporation at Empire, Ore., went over the top in their war bond drive in March with 10.1 per cent of the gross payroll going to Uncle Sam to wage the war against the Axis.

This represented 95 per cent participation of the personnel of the plant. A ceremony was planned for the unfurling of a Treasury T flag award.

Lester Sprogies, of the maintenance department and president of the Coos Bay Local 232, International Brotherhood of Pulp, Sulphite and Paper Mill Workers, was chairman of the bond drive committee.

The committee was made up of the following employes: Lester Croff, sawmill; Norman Gale, chip plant; R. R. Brown, digesters; Frank Putman, machine room; Vern Thomas, boiler house; and Roy Cameron, filter plant and miscellaneous. Jim Fraser, superintendent, and George Blessing were also on the committee.

Women Join Armed Services

● Three women employees of Crown Zellerbach Corporation at Camas have joined the armed forces. Thelma Rancore of the bag factory has joined the marines auxiliary, and Virginia Wey, who was pressing bags in the factory, and June Rainey, who was running a bag machine, have both joined the Spars. The two latter girls were holding men's jobs in the mill.

Ed Brennan Married

● Ed Brennan, plant manager of the British Columbia Pulp and Paper Company mill at Woodfibre, B. C., was married recently to the former Miss Helen Finnegan.

Announcing

A NEW WET STRENGTH RESIN FOR BEATER USE

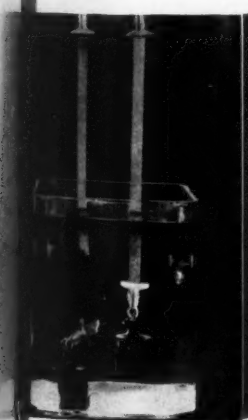
Paper manufacturers long have hoped for the development of a product and process that would impart wet strength to paper and, at the same time, have the practical advantage of being effective when incorporated in the paper stock *prior* to the formation of the sheet. It is with pleasure that American Cyanamid announces the development of such a product and process.

This new product needs only to be dissolved in water, and with the addition of a common and inexpensive chemical can then be added to the stock at the beater or elsewhere. The rest of the paper making operation can proceed as usual. As will be readily appreciated, this simplified method eliminates the bother of surface applications. The paper will be found to retain a substantial percentage of its dry strength even after prolonged soaking in water.

Certain valuable and unexpected properties, in addition to those for which the new synthetic resin was originally developed, are now reported by the Cyanamid technical staff. These features are included in the following summary, and apply when the resin is properly used as in the manner described above . . .

1. Folding endurance of the *dry* paper is considerably higher than without the resin treatment.
2. Bursting and tensile strengths of the *dry* paper are appreciably higher.
3. Resistance to water absorption of rosin sized papers is improved.
4. Absorbency of unsized paper is not noticeably affected.
5. These properties of paper are retained after prolonged storage even under adverse conditions of temperature and humidity.

If you are one of the many manufacturers who have been waiting for such a product, write us for more complete information or talk it over with your Cyanamid representative. Cyanamid technical service men are available for mill demonstrations.



(Left) Wet strength test in Cyanamid paper chemicals laboratory. Both papers have identical weights attached to submerged ends. Unbroken paper strip at right is stock made with new synthetic resin which continues to hold the weight after days of suspension in water. The strip at left, which has not been given any wet strength treatment, broke in 3 minutes.

(Left) The new Cyanamid synthetic resin gives to blueprint paper the wet strength needed in continuous roll blueprinting to prevent tearing under stress after submersion.

(Right) The new Cyanamid synthetic resins for paper making facilitate manufacture of wet strength cartons and the production of a better board.

Waxes - Rosin Sizes - Synthetic Resin - Casein - Alum - Corn Starch Tapioca Flour - Sulphonated Oils Fillers - Defoamers - Soda Ash Caustic Soda - Salt Cake - Acids Clays - Satin White Aerosols* Wetting Agents - Calmicro* (Calcium Carbonate) and other Paper Chemicals

*Reg. U. S. Pat. Off.

American Cyanamid & Chemical Corporation

A Unit of American Cyanamid Company

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Northwest Mills Trying Out Three-Dimensional Seeing Paints

Weyerhaeuser mill at Longview and Crown Zellerbach plant at West Linn experiment with new painting system developed by DuPont which is said to increase production, reduce injuries, improve working conditions and morale.

IN the December issue of THE PACIFIC PULP AND PAPER INDUSTRY, an article discussed in a general way recent discoveries made in the light-reflecting functions of paint in industrial plant interiors. Two Pacific Northwest pulp and paper mills are now experimenting with new painting systems.

In what seems to be a rather belated recognition of very simple rules, it has been found that certain colors can be used to conserve light and improve seeing conditions. However, it has taken considerable research and experimentation to discover just what shades of paint provide for the greater efficiency in seeing and the greatest conservation of light. It seems a simple problem on the face of it, but in working it out scientists have determined the exact reflection capacities of different colors and the exact reflections desired in various places in a plant for the benefit of the workers. Thus, they have determined that a ceiling should reflect 75 per cent of the light that strikes it under certain conditions—a higher percentage under other conditions. And painted walls directly in line with a worker's vision should have a light-reflection factor of 50 to 60 per cent.

Among those who have made such studies in recent years is A. A. Brainerd of Philadelphia Electric Company, who carried on research in collaboration with Matt Denning of E. I. du Pont de Nemours & Co. They developed what they call "three-dimensional seeing" paints. By using lighter colors on floors, walls, ceilings, machines and furniture, they frequently were able to more than double the light utilization coefficient of a work room. For example, a room in which only about one-fourth of the light given out by lamps reached working surfaces might be so painted as to create conditions under which more than half the light reached these surfaces.

Now the du Pont Company Finishes Division has scientifically planned the repainting of workrooms and machines in a number of large industrial plants on the West Coast. In many of these plants, the repaint job has been completed.

Advantages of the System

● The advantages of this color science are four-fold, according to representatives of the du Pont company:

1. Increased production.
2. Reduced personal injuries.
3. Better working conditions.
4. Improved morale.

At the Weyerhaeuser-Longview Mill

● An extensive tryout of this paint science is being made at the Longview Mill, Pulp Division Weyerhaeuser Timber Company, Longview, Wash., under the direction of W. F. Kerlinger, Portland representative of the du Pont Company. A representative of PACIFIC PULP AND PAPER INDUSTRY visited the pulp mill recently and saw at first hand how the paints were applied. In the following description, he has had the expert guidance of Mr. Kerlinger, particularly in the use of the special names given to the various paints by du Pont.

The operating floor of the bleach plant at Longview has been completely repainted.

What was a dark, drab ceiling is now a glossy white with high reflective value but no glare, according to Warren Arnold, the bleacherman. From the floor upward five feet there is what is called a horizon shade of buff. The balance of the walls above this line are in a high reflective value white.

A neutral gray is used generally on all machinery in the room to increase the light reflective value but not to make it outstanding. This is called "Dulux" machinery finish horizon gray.

A spotlight buff is used on moving parts, couplings, bearings and also around control points, bringing them out in contrast to the gray on the rest of the machinery. As Ed Hinde, engineer of the Longview Mill, commented: "This Spotlight Buff tends to make the worker unconsciously critical of dangerous parts and control gadgets."

It was used on all valve hand wheels in the room and also on the instrument panels. The inspection covers had a buff spotlight border. This border would unconsciously remind the worker that he might expect a little steam on lifting the cover, it was explained.

An interesting feature of the paint job was that all around underneath the large washer vats was a wall buff color. Before this paint job was done, there were a lot of dark recesses under these vats.

"There was a tendency to let stock accumulate under the vats and, because nobody noticed it, the stock was not hosed or cleaned out," said Mr. Hinde.

"Things are certainly lively around here now," said Mr. Arnold. "I'll have to leave it to the experts to say how much easier it is on our eyes. But I do know it is more cheerful and there's lots more light.

"But it may be more of a cleaning job than we had before," he said.

"And that will be a good thing," chimed in Mr. Hinde. "Since it is bright and cheerful we will want to keep it cleaner. And it will be easier to clean than it was before because the surfaces are smoother."

Jokingly, Mr. Arnold added the comment: "Now, I guess we'll have to wear neckties to work!"

Engineer Hinde said that perhaps the most important advantage in war time of the paints was the aid they give to seeing in continuously blacked-out work rooms.

A so-called spotlight green is used in the Weyerhaeuser chipper room and also on overhead I-beam cranes. Over in the Weyerhaeuser Timber Company's planing mill in the timber division, the paints are used to spotlight dangerous parts of the planing machinery.

At West Linn

● Further experiments with the new "three-dimensional seeing" paints are being made at the Crown Willamette Paper Company, divi-

sion of Crown Zellerbach Corp., at West Linn, Ore. Here it is being tried out in the machine shop, where about 45 men are employed, mostly in doing important war work. As in many other pulp and paper mills, West Linn is devoting much of machine shop labor and time to finishing valves, winches and other parts for Uncle Sam's ships, so urgently needed in fighting the war.

The so-called spotlight colors are used on lathes, shapers, planers, drill press and on the core saw, a high speed saw. The paint also has been used on slitters on the pulp dryer.

Alongside the various advantages they find in use of the paints, the West Linn employes commented the only difficulty they found was that they had to keep the painted places clean but "we certainly get a lot more light."

Banned Paper Products List Is Revised

● Some changes have been made in the lists of paper articles whose production in the United States has been prohibited or restricted.

Paper novelty bouquets and chop holders were added to list of items whose production is prohibited entirely for the duration under Conservation Order M-241-a. Coin cards were taken off the list.

Also taken off this list but added to list of articles whose production is reduced by varying percentages were coasters, doilies, mats, tray covers, slippers, collar circles and supports, venetian blinds and shirt bands of two inches width or less.

Quota restrictions on envelopes, tablets, notebooks, paper stationery, waxed papers, toilet seat covers and paper ribbons were eliminated. To avoid discrimination in favor of comparable grades as yet unrestricted, friction and flint-glazed paper, metallic and mica-coated papers and plated and mat finished papers were also removed from List A, which limited their production to 50 per cent of 1942 output.

Appeals may be made by persons who contend they are suffering a hardship because of the order. Appeals should be made in triplicate, stating fully the grounds, and they should be addressed: War Production Board, Pulp and Paper Division, Washington, D. C. Ref.: M-241-a.

List A

The converter may use pulp, paperboard or paper up to percentage, as listed, of the amount he used last year. He may use the percentage for all of 1942 in regulating output for all of 1943. Or he may use a figure for any quarter of 1942 to regulate the corresponding quarter's production in 1943.

Asterisk (*) indicates additions to the list as published in this magazine in January.

Articles or class of articles:	Percentages
Chair seat covers	75
*Coasters and mats, such as beer mats, and coasters of the type commonly used for households, hotels, taverns, restaurants, etc.	50
Dishes, plates and spoons	90
*Doilies, mats (place, table and tray) and tray covers	60
Expansion pockets, unprinted	90
Facial tissue	90
File folders, unprinted	90
Fly Paper	90
Household rolls (waxed)	90
Index tabs, unprinted	90
*Laundry specialties, to-wit—	
(a) Shirt bands (2" wide or less)	90
(b) Collar circles	
(c) Collar supports	
Napkins	95
Photo mounts	75
Salt and pepper shakers	90
*Slippers	75
Toilet tissue	110
Towels	95
Venetian blinds	90

List B

Articles and classes of articles in the manufacture of which pulp, paper or paperboard may not be used.

Aprons.
Ash trays.
Bakers decorative specialties, such as:
(a) Pie collars and rings.
(b) Cake circles.
(c) Cake laces.
(d) Casserole collars.
Bird cage specialities, such as:
(a) Bird cage bottoms.
(b) Bird cage covers and hoods.
(c) Bird cage food holders.
Bouquet holders for displays, corsages, etc.
Card table covers.
*Chop holders.
Combs.
Costumes.
Dusters and dusting papers.
Finger bowl liners.
Hanger protectors.
Novelties—Holiday, party, advertising and decorations, such as:
(a) Garlands.
(b) Serpentines.
(c) Horns.
(d) Hats.
(e) Table decorations and place cards.
(f) Streamers, including those for window display and decoration.
(g) Flower pot covers.
(h) Costumes.
(i) Decalcomania transfers (for non-commercial use).
(j) Artificial flowers and flower specialties.
(k) Confetti.
(l) Festoons.
(m) Fireworks (except for armed forces)
*(n) Bouquets.
(o) Skewers.
Poker chips.
Punch boards, pullboards and similar articles.
Shelf and drawer lining—Retail packages.
Shirt protectors and envelopes.
Shirt bands (wider than 2").
Shirt boards.
Shirt displayers.
Tablecloths.
Window drapes.

News Print Service Passes 25th Milestone

● The News Print Service Bureau and its secretary-treasurer, R. S. Kellogg, have passed together their quarter century milestone in service to the newsprint industry.

Beginning in world war I and carrying through the depression, the NRA era and into world war II, the Bureau's monthly bulletins have presented newsprint manufacturers with all kinds of vital information from production statistics and newsprint imports to advertising and circulation data. The annual and quarterly reviews have performed similar services over longer periods.

Reports have covered 100 per cent of North American newsprint production for the past twenty years. And for 13 years until war interrupted in 1939, Mr. Kellogg compiled worldwide newsprint statistics.

There have been many other services performed by the Bureau, including collecting weekly samples of newsprint, compiling mill wage statistics, setting up standards of cost accounting, etc.

33 Years in Trade Work

● Mr. Kellogg has been trade association secretary for 33 years, previously serving in this capacity in the Northern Hemlock and Hardwood Association and later in the Lumber Manufacturers' Association, with headquarters in Chicago. Before this period he served for ten years in the U. S. Forest Service after attending Kansas State College. He is author of several books, among them being "Pulpwood and Woodpulp in North America," "Lumber and Its Uses" and "The Story of Newsprint Paper." He is a member of TAPPI.

J. D. Zellerbach, president of Crown Zellerbach Corp., is a member of the Bureau's executive committee. One of its past presidents is Louis Bloch, now chairman of the Crown Zellerbach Corp. Currently, the president is A. L. Hobson of St. Croix Paper Co.

Stenstrom Makes Survey For Powell River

● David G. Stenstrom, Vancouver paper mill consultant, has been engaged by Powell River Company to make an extensive survey of the prospects of making more effective utilization of forest waste in the woods of British Columbia.

The Powell River Company has been conducting research along this line for the past two years, being intensely interested in the long-term situation affecting forest conservation and maximum use of available resources.

It is understood that Mr. Stenstrom is investigating the feasibility of adopting some of the methods recommended by Prof. Bror Grondal of the University of Washington for the operation of small portable pulp units in logged-over areas.

The survey will not be completed for some time, but the results of the preliminary inquiries may be soon available.

Pipefitters Win Tourney

● The pipefitters' bowling team won the 1942-43 bowling championship of the Longview Fibre Company's bowling league on April 8, after a close contest with the machine room team.

The pipefitters were the winners of the first half of the schedule while the machine room were the second half winners.

Acid Making In the Sulphite Pulp Industry

by A. H. LUNDBERG*

CHAPTER I -- Continued

Sulphur Dioxide Saturation Charts

● Based on the foregoing data a number of charts have been prepared of saturation of SO_2 in water and Calcium Bisulphite solutions at various pressures and temperatures.

A. Chart XI. Calcium-Bisulphite Solution saturated with 100% SO_2 gas at 760 mm. Hg. (14.7 lbs. Absolute Pressure or 1 Atmosphere).

Chart XII: Calcium-Bisulphite Solution saturated with 100% SO_2 gas at 1520 mm. Hg. (29.4 lbs. Absolute Pressure or 2 Atmospheres).

Chart XIII: Calcium-Bisulphite Solution saturated with 100% SO_2 gas at 2280 mm. Hg. (44.1 lbs. Absolute Pressure or 3 Atmospheres).

Chart XIV: Calcium-Bisulphite Solution saturated with 100% SO_2 gas at 3040 mm. Hg. (58.8 lbs. Absolute Pressure or 4 Atmospheres).

Chart XV: Calcium-Bisulphite Solution saturated with 100% SO_2 gas at 3800 mm. Hg. (73.5 lbs. Absolute Pressure or 5 Atmospheres).

B. Following charts have been prepared to give the relationship between Combined SO_2 and Total SO_2 of saturated solutions for various gas strengths and at various temperatures. All temperatures given are the final temperatures of the acid.

The technical data in Chapter I provides the basis for Chapter II which will discuss the use of this data in sulphite pulp mill operation.

The thermo-chemistry of acid making will be discussed later.

Charts XVI-A and XVI-B show the relationship at 15° C. (59°F.) at Atmospheric (0 lbs. G.P.) and 5 lbs. Gauge Pressure respectively.

Charts XVII-A, XVII-B, XVII-C and XVII-D show the relationship at 20° C. (68°F.) as Atmospheric, 5, 10 and 15 lbs. Gauge Pressure respectively.

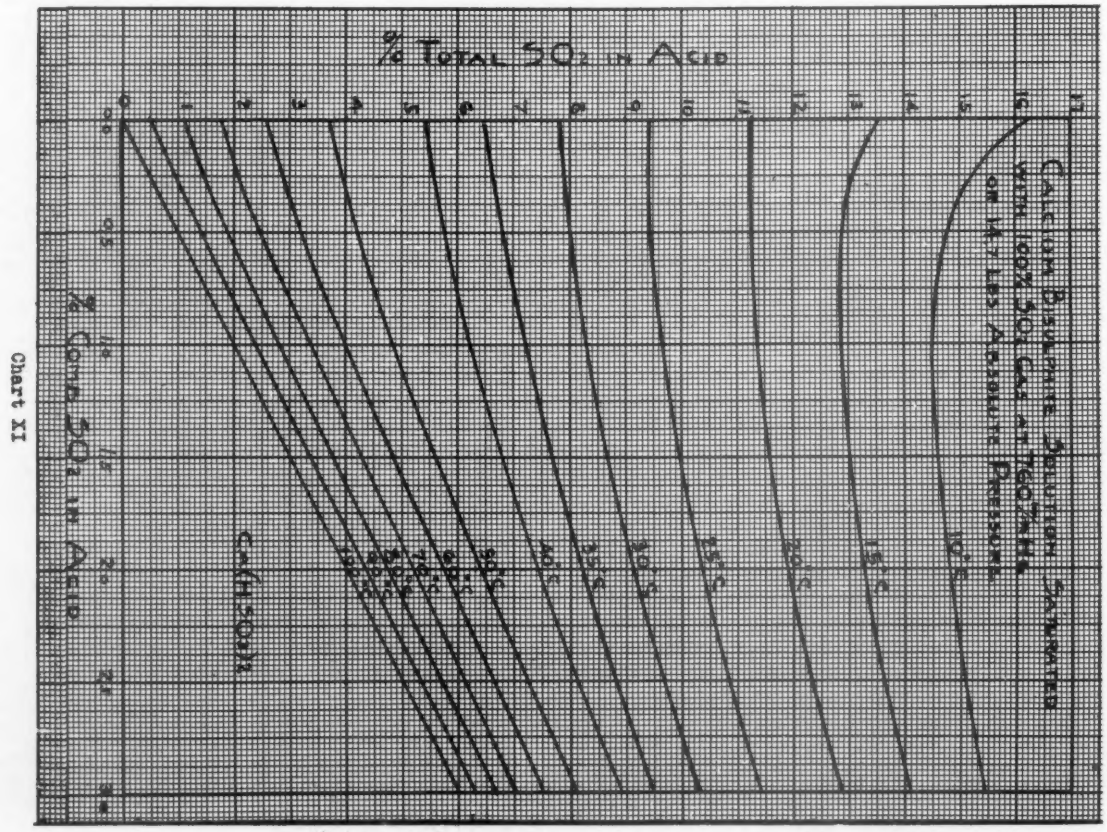
Charts XVIII-A, XVIII-B, XVIII-C and XVIII-D show the relationship at 25° C. (77°F.) at Atmospheric, 5, 10 and 15 lbs. Gauge Pressure respectively.

Charts XIX-A, XIX-B, XIX-C and XIX-D show the relationship at 30°C. (86°F.) at Atmospheric, 5, 10 and 15 lbs. Gauge Pressure respectively.

Charts XX-A, XX-B, XX-C and XX-D show the relationship at 35°C. (95°F.) at Atmospheric, 5, 10 and 15 lbs. Gauge Pressure respectively.

*Seattle, Washington. Mr. Lundberg is Western Manager, G. D. Jenssen Company, New York City.

Editor's Note—Charts XVIII-A to XX-D will be published in next month's issue.


% Total SO2 in Acid
% Combined SO2 in Acid
Chart XI
Calcium Bisulphite Solution saturated with 100% SO2 gas at Atmospheric Pressure

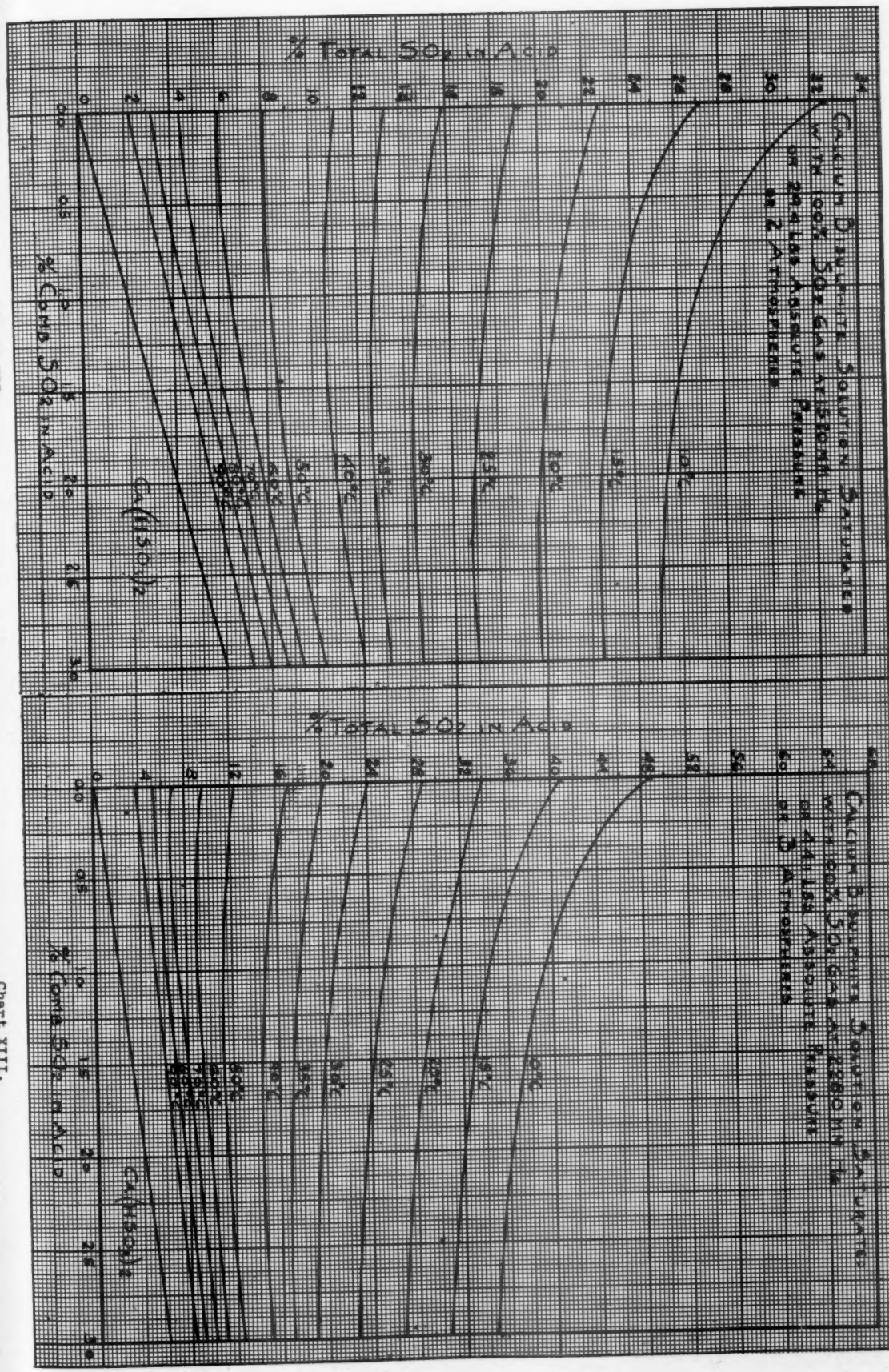

% Total SO2 in Acid
% Free SO2 in Acid
Ca(HSO3)2
Calcium Bisulfite Solution Saturated with 100% SO2 Gas at 760 MM Hg or 29.4 Lbs. Absolute Pressure or 2 Atmospheres
% Total SO2 in Acid
% Free SO2 in Acid
Ca(HSO3)2
Calcium Bisulfite Solution Saturated with 100% SO2 Gas at 760 MM Hg or 29.4 Lbs. Absolute Pressure or 2 Atmospheres

Chart XII.

Chart XIII.

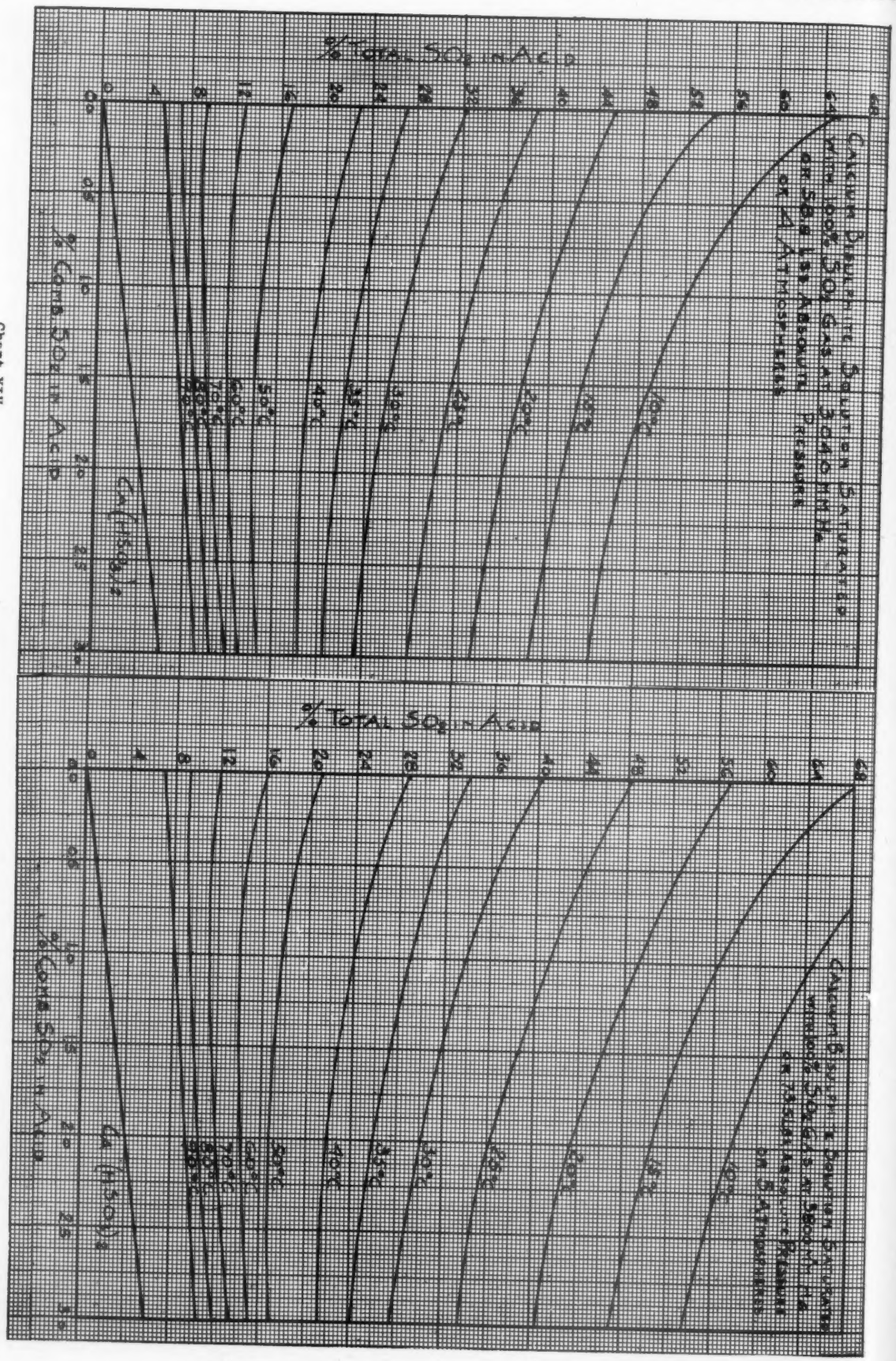

% Total SO2 in Acid
% Combined SO2 in Acid
Ca(HSO3)2
Calcium Bisulphite Solution Saturated with 100% SO2 Gas at 30 Min. Intervals at 58° Lbs. Absorption Pressure or 4 Atmospheres
% TOTAL SO2 in Acid
% Combined SO2 in Acid
Mg(HSO3)2
Magnesium Bisulphite Solution Saturated with 100% SO2 Gas at 30 Min. Intervals at 58° Lbs. Absorption Pressure or 4 Atmospheres

Chart XIV.

Chart XV.

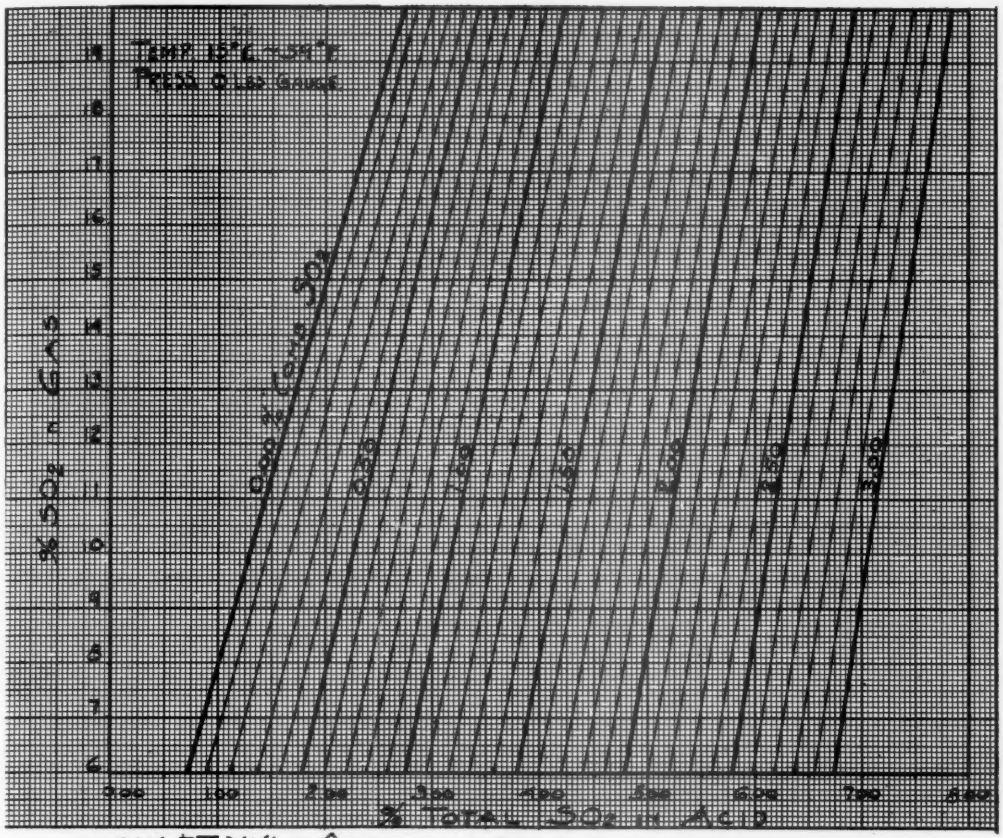


CHART XVI – A.

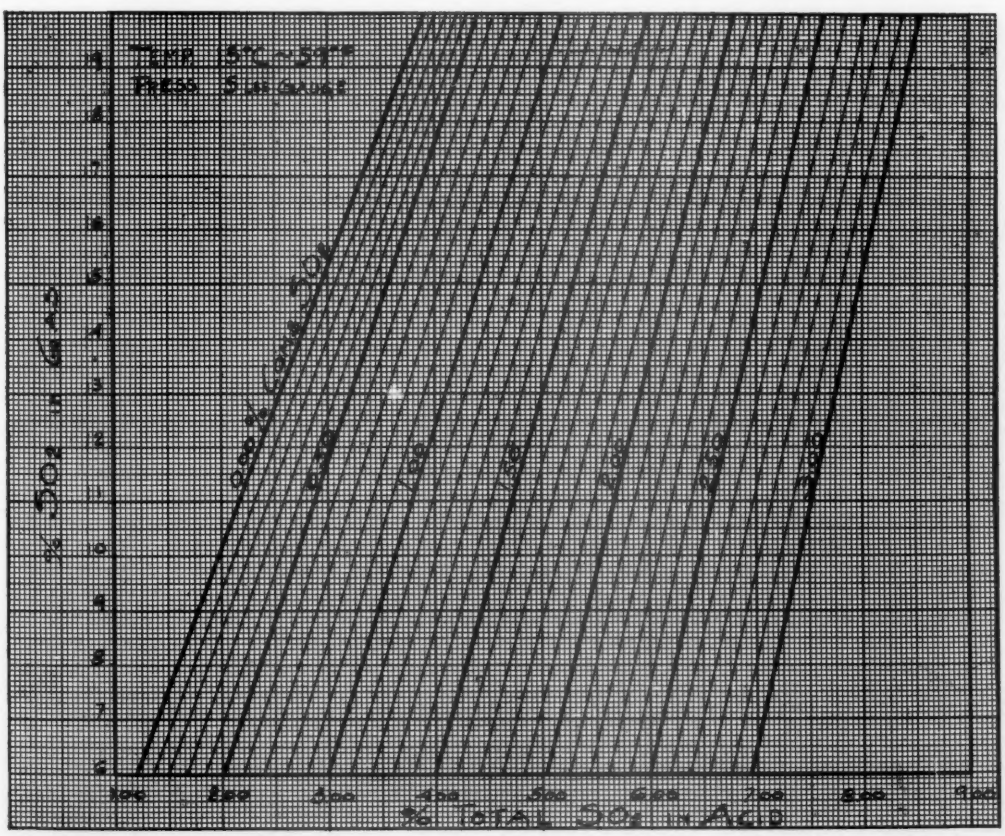


CHART XVI – B.

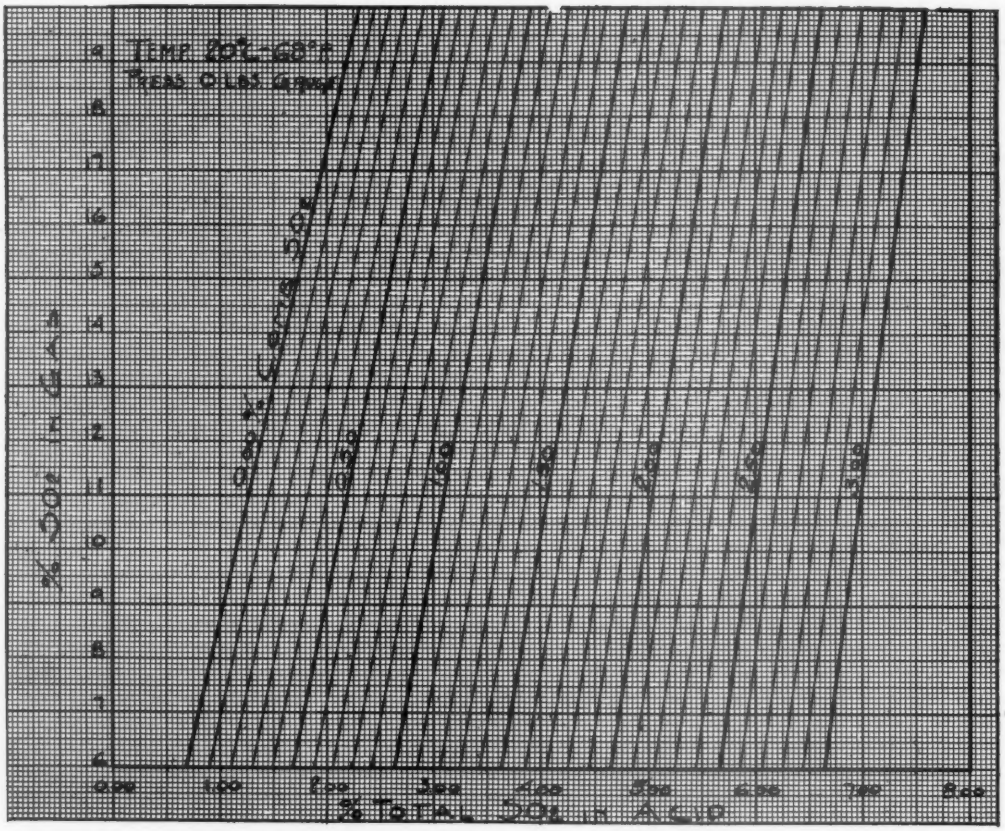


CHART XVII-A.

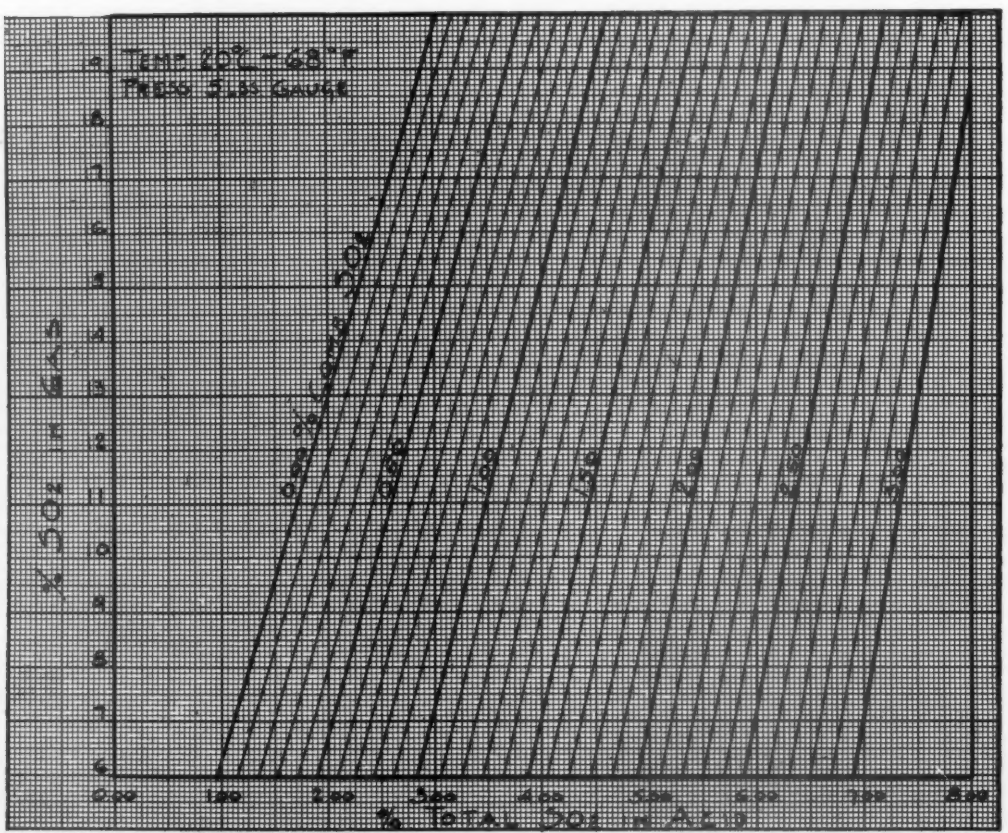


CHART XVII-B.

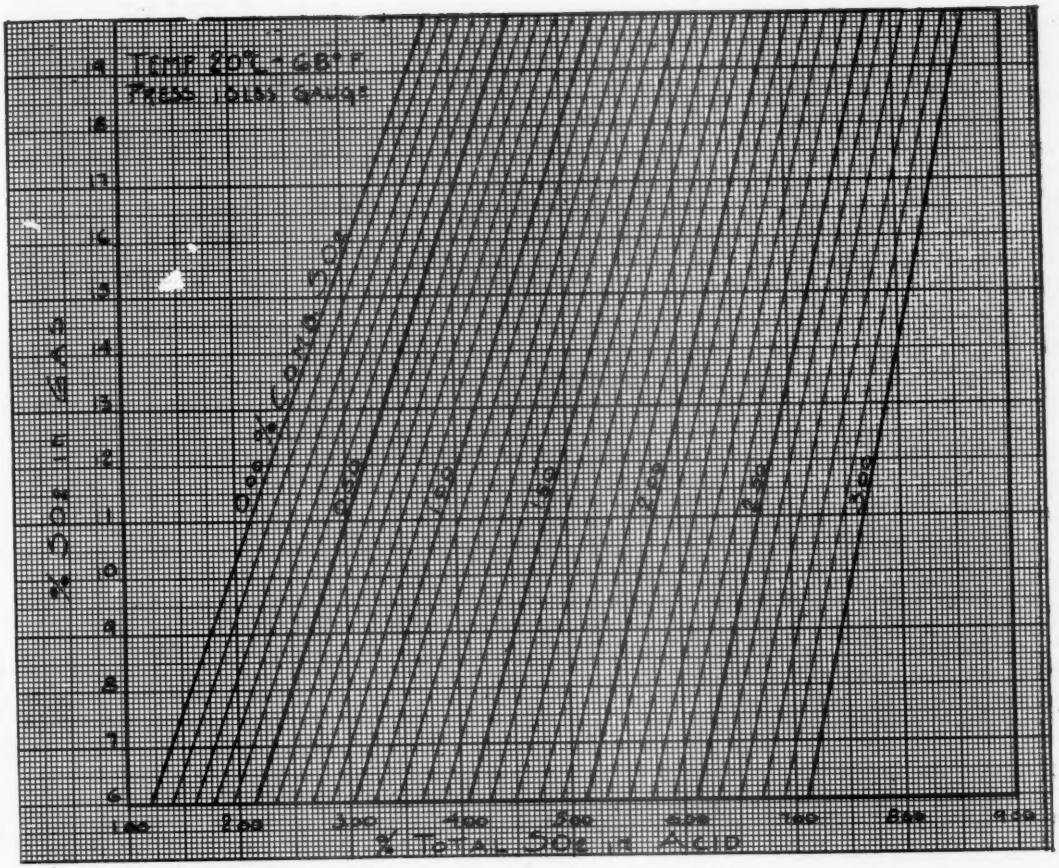


CHART XVII-C.

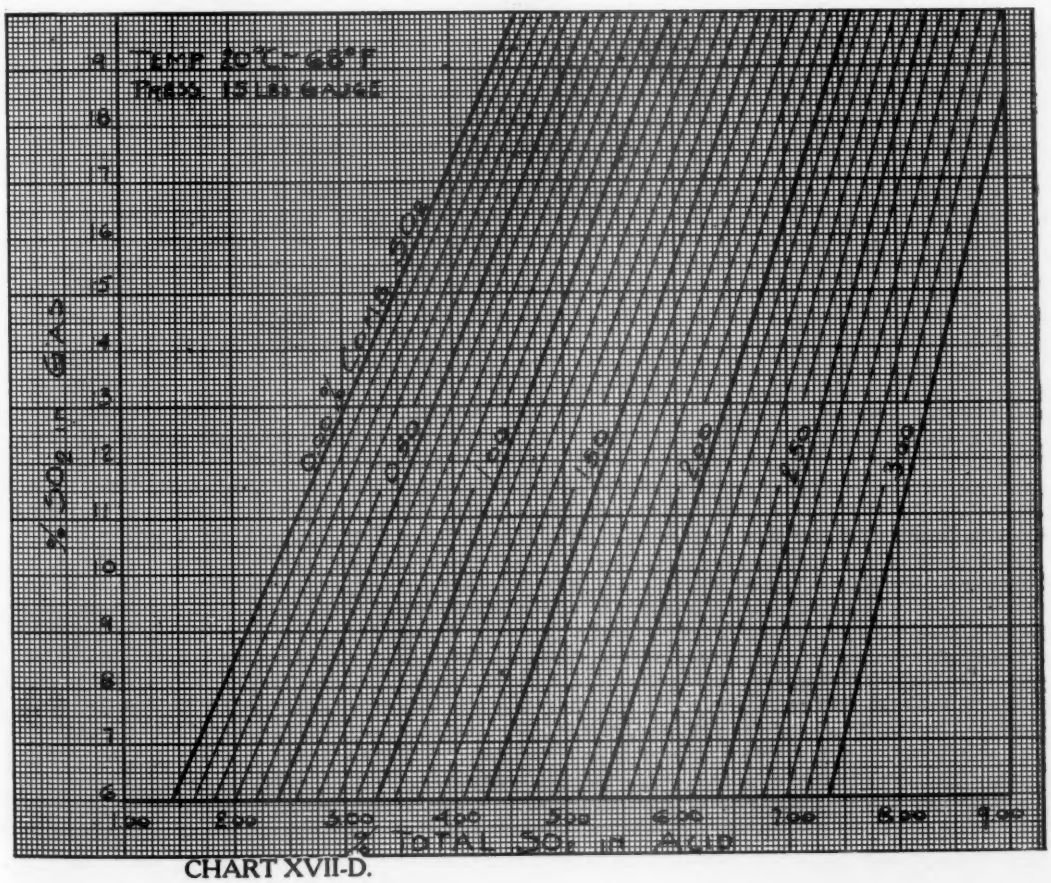


CHART XVII-D.

Huge quantities of the chlorine which Western Industry uses for the production of essential paper — strategic metals and synthetic rubber, the salvaging of tin and dozens of other vital war materials—are being supplied by Great Western Division, The Dow Chemical Company.

Chlorine is but one of more than 500 other dependable chemicals produced by Dow and considered indispensable to Industry and Victory. Great Western produces chlorine with the same exacting care and "know how" that produce Dow magnesium from sea water and Michigan brine—that manufacture many new and interesting plastics—that supply a major portion of this nation's requirements for phenol.

Dow's Great Western Division, located in the West, is dedicated to an ever expanding program for the production of dependable chemicals and to the exclusive service of Western Industry.

GREAT WESTERN DIVISION • THE DOW CHEMICAL COMPANY
Seattle SAN FRANCISCO, CALIFORNIA, U. S. A. Los Angeles

BEAR BRAND CHEMICALS

MANUFACTURED FOR WEST COAST INDUSTRIES

INDUSTRIAL CHEMICALS

Ammonium Chloride
Aqua Ammonia
Canners' Soda
Caustic Potash
Caustic Soda
Ferric Chloride
Hexachlorethane
Methyl Bromide
Muriatic Acid
Zinc Hydrosulphite

ORGANIC SOLVENTS

Carbon Tetrachloride
Chloroform
Methylene Chloride
Methyl Chloride

COMPRESSED GASES

Chlorine Anhydrous Ammonia Sulphur Dioxide

FLOTATION REAGENTS

Z-3 Potassium Ethyl Xanthate
Z-4 Sodium Ethyl Xanthate
Z-5* Potassium Amyl Xanthate
Z-6* Potassium Pentasol Amyl Xanthate
Z-8 Potassium Secondary Butyl Xanthate
Z-9 Potassium Isopropyl Xanthate
Z-10 Potassium Hexyl Xanthate

*From Sharples Amyl Alcohol

DOW

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The Maintenance of Battery Powered Industrial Trucks

by R. H. PORTER*

THE battery-powered industrial truck, possibly because of its ability to operate longer without proper maintenance than most similar equipment, is often neglected to the point where its normal span of usefulness is seriously impaired, before it is finally inspected and overhauled.

Today, such negligence is inexcusable, since during no previous emergency in the country's history have conditions necessitated such rigid maintenance of industrial equipment as now.

Regular inspection and overhauling are the only positive guarantee of the continuous, efficient performance demanded by the 24-hour-a-day, 7-day-a-week production schedules now so common.

The following suggestions then, are designed to facilitate the care and maintenance of the electrical end of this important piece of equipment:

General Precautions

● The batteries, sole source of propulsive energy, should be inspected and serviced at regular intervals, according to the recommendations of the battery manufacturers, and replacements made without delay.

Both the traction motor, which propels the truck, and the hoist motor, which drives the pump on trucks equipped with hydraulically operated hoist and tilt mechanisms, or the gear box on gear or chain drive hoist and tilt mechanisms, should be inspected monthly and overhauled approximately once a year.

The controller, the commutator, the contractor, the accelerating resistor and all allied parts should also be inspected and overhauled at like intervals.

Naturally, local conditions and the skill of the operator will dictate the frequency of inspection and overhauling.

Suggested procedures follow:

Traction Motor — Monthly Inspection

1. Remove dirt from commutator cover and surrounding parts to prevent it from falling into the motor.
2. Remove commutator cover and examine mechanism, noting that copper surface has a smooth polished appearance and is free of copper beads and grease.
3. See that the brush-holder mechanisms seat on brushes and that shunts and terminals are tight.
4. Wipe carbon dust from cables and brush holders.
5. Remove dirt from brushes by lifting springs and raising and lowering brushes in the carbon ways. Do not snap the springs, as this may chip the brushes.
6. Replace short or broken brushes with new ones of the proper grade. if only partial replacement is made, grind new brushes to same length as the other brushes in the motor.
7. Inspect connections for tightness.
8. Examine the interior of motor for charred or broken insulation or other injuries and replace damaged parts.
9. Replace commutator cover.

Traction Motor — Annual Overhauling

1. Remove motor from truck and clean outside of it.
2. Remove commutator cover and raise the brushes from the commutator to avoid damaging them.
3. Remove the nuts from the studs at the pinion end of motor and withdraw the armature complete with commutator-end bearing assembly and pinion end framehead through pinion end.
   IMPORTANT: To obtain maximum life from bearings, they must be kept free of dirt. therefore, when bearing assemblies are removed from motor, keep them covered.
4. Remove the pinion end framehead assembly and commutator-end bearing assembly from armature, employing suitable puller.
5. Blow out dust and dirt from armature, using clean DRY compressed air and wipe clean of oil and grease with a cloth saturated with carbon tetrachloride.
6. If armature is found in good condition, proceed as follows:
7. Bake at least 12 hours at 120 C. (250 F).
8. While hot, paint with a varnish such as Glyptal No. 1201. Paint the string beads but take care to keep the commutator clean.
9. Bake for twelve hours at 120 C (250 F).
10. Take out the cap screws at the commutator end and remove the framehead.
11. Blow out the interior of motor with clean DRY compressed air and wipe clean of any oil and grease with carbon tetrachloride.
12. If field coils are tight and in good condition, paint them with varnish such as Glyptal No. 1201. Also, paint the interior of the motor with varnish, using care not to get any varnish on the pole-piece faces. Otherwise, remove field coils as follows: disconnect the cables and remove the cap screws holding field piece to frame. Then slide out the pole and coil through end of frame and slip coil off pole. Keep each pole, coil and any accompanying shims together. Upon reassembly, parts should be returned to their original position, use new lock washers with pole-piece cap screws, make sure that contact surfaces are clean, cables are properly reconnected and cap screws drawn up tightly. Check the coil polarity. Guard against loose connections at all times.
13. Remove dust and dirt from brush holders and cables with carbon tetrachloride.
14. Note that brush-holder mechanisms operate properly; that brushes are free in carbon ways; that shunts and terminals are tight and that carbon ways are not rough or worn. Brushes should never be allowed to wear so short that the pressure arm of the lever rests on the top of the brush-holder carbon way instead of on top of the brush. All brushes must have the same length to obtain an even distribution of current. (NOTE: New brushes may be fitted to the commutator brush holder by placing a strip of fine sandpaper between the end of the brush and the commutator with the rough side of the sandpaper against the brush.)

*Engineering Department, General Electric Company, San Francisco.

Top view, Hesse-Ersted men and their wives at the presentation ceremony of the Maritime "M" Burgee and Victory Fleet Flags.

Second view, reading left to right: Harry Walsh, veteran employee; Kenneth B. Hall, President; Richard W. Owens, Industrial Advisor, United States Maritime Commission; Lawrence Frey, Plant Superintendent; Walter Linton, veteran employee; George R. Castner, Assistant Treasurer.

The Fine group of MEN - - and the high quality PRODUCTS - - honored with this Maritime "M" *and* Victory Fleet Flag, will be ready, when peace comes, to

SERVE YOUR NEEDS

600 Anchor Windlasses, for Liberty Ships, Pacific Coast Tankers and Navy Auxiliary Vessels, have been built by our men for the U. S. Maritime Commission. Also Cargo Winches, Cylinders and other deck machinery.

IRON

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BUILDERS OF DECK MACHINERY

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15. Pole-piece cap screws must be tight and locked with lock washers.
16. Reassemble parts on armature. When replacing bearings, use a suitable brass sleeve so that the pressure will be on the inner race of the bearings.
17. Reassemble armature in frame, putting in new brushes if necessary.

The Commutator

● The commutator should never be lubricated since the brushes contain sufficient lubrication. A dirty and greasy commutator will collect carbon dust in the grooves between the segments. This condition will cause a short circuit. The commutator should be kept smooth and concentric with the armature bearings. If the commutator brush surface should become rough, burned, pitted or excessively worn, the armature should be placed in a lathe and the copper turned down just enough to give a true surface. The mica between the copper commutator segments is undercut to 3/64 in. below the copper brush surface on new commutators and should be undercut as often as necessary to prevent the mica from becoming flush with the copper brush surface. Slightly round all sharp edges on the copper segments after turning or undercutting and remove all chips, sharp edges and copper dust from the grooves between the segments. Care must be taken to prevent the copper chips and dust from lodging in the armature winding while reconditioning the commutator, by using a suitable head covering over the end windings.

Pump Motor — Inspection and Overhauling

● The same procedure suggested for the inspection and overhauling of the traction motor should be followed in the case of those industrial trucks equipped with a motor-driven gear-and-chain or hydraulically operated hoist and tilt mechanism, except for the differences in the method by which the motor is removed or opened.

Details vary according to the particular type of truck involved, but in general it is necessary first to disconnect the coupling between the motor and the pump. The mounting screws may be differently located, but an inspection will make it readily apparent what changes need to be made in the routine as already mentioned in connection with the traction motor.

The Controller

1. Blow out all dust and grit with clean DRY compressed air.
2. If required, oil contact cam rollers through holes provided insulating support and oil reverser-shaft bearing. Use an accepted lubricant in a long snout oil can.
3. Replace any broken springs or shunts and check all connections for cleanliness. Tighten if loose.
4. Inspect contact tips for cleanliness and wear and carefully remove any roughness on contact surfaces with a clean fine file. Contact tips worn halfway through should be replaced.
5. At yearly overhaul period, remove, clean and repack main shaft bearings with an accepted ball-bearing grease.
6. Both the contact tip pressure and the tip gap (distance between the tips when the contactor is open) should be checked periodically.

Contactor

● The contactor should be inspected at the same time the controller is inspected, as follows:

1. Use clean DRY compressed air to blow out all dust and grit, being sure to blow out all metallic dust from contact points.
2. Replace any worn or broken points.
3. If the contact tips are badly burned, dress down with a fine file. (Do not waste contact metal.) Replace tips when worn halfway through.
4. Inspect cable and shunt connections for loose or faulty electrical contact.
5. Periodically check contact tip gap.

NOTE: Specific information relative to coil operation and contactor adjustment should be obtained from the manufacturer.

Accelerating Resistor

1. Blow out all dust and dirt with clean DRY compressed air and check all connections for tightness.
2. Check both register ribbon and porcelain insulator for damage or breakage.

From the foregoing, then, it is obvious that proper maintenance of this important piece of industrial equipment, maintenance that will largely eliminate expensive breakdowns and replacements, is based solely on the commonsense, but often disregarded, theory of preventing trouble before it starts.

Portland Safety Engineers Given National Recognition

● Two men who are widely known in the pulp and paper industry are happy these days because a Portland, Ore., organization to which they belong has been given national recognition.

The Portland Society of Safety Engineers is now known as the Portland chapter, American Society of Safety Engineers, Engineering Section, National Safety Council.

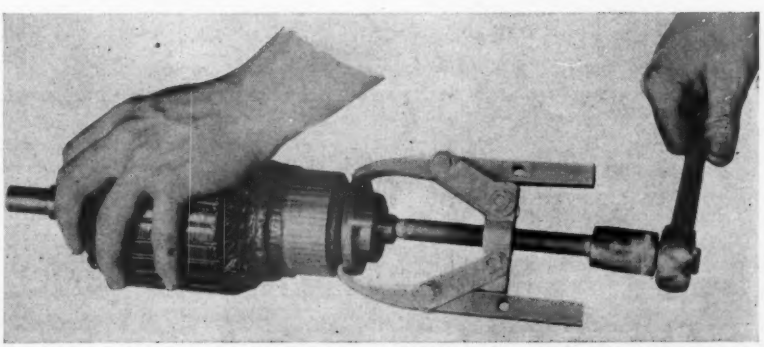
Otto Hartwig, social security adviser and general safety supervisor, Crown Zellerbach Corporation, is on the executive committee of the Portland group. Secretary-treasurer of the new chapter is Miles Murray, Mr. Hartwig's assistant in the Crown Zellerbach organization.

The chapter chairman is R. A. Stanton of the U. S. Army Engineers. Seattle and San Francisco previously had been granted chapters in ASSE. Certain standards must be met before a group is admitted.

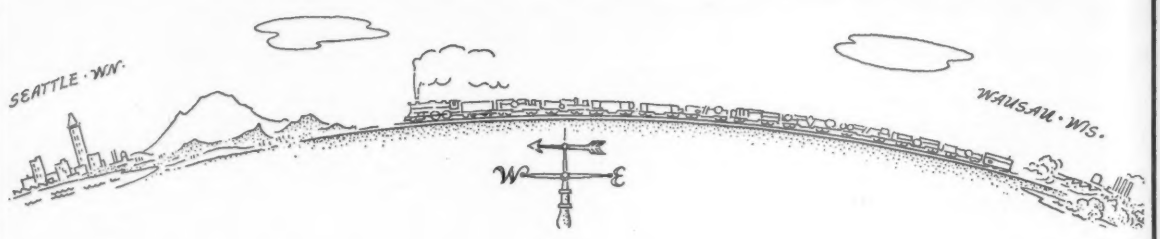
Camas Men In Service

● During the past month, the following men have left the Camas, Wash., plant of the Crown Zellerbach Corporation to enter the armed forces, raising the total to 307.

Darrel Edgar Wright to enter the army; Velton Albert Davis, to be carpenter's mate in the U. S. Navy Seabees, and Leith David Ross, to be machinist's mate, 2nd class, in the Seabees.



Wound revolving armature for General Electric D-C motor, Type GE-1229. Side view showing front (commutator) end ball bearing being pulled off shaft.



PULP BLEACHING MOVES WEST...

and Acquires New Associates

REORGANIZATION of Pulp Bleaching Company and its association with Webster-Brinkley Co., Seattle, brings into combination a unique background of process experience, modernized manufacturing facilities, and a war-proven capacity to engineer tough jobs and get them done in a hurry.

Pulp Bleaching Company, formerly of Wausau, Wisconsin, has been the leading specialist in equipment for cellulose purification and related processes for the past twenty years. It has made installations in seven countries, having a capacity of over 10,000 tons per day, handling every type of fibre from which pulp is made. All of the present United States supply of wood cellulose for explosives, and a large part of the British Empire supply, is made in equipment designed and built by this Company.

Raymond P. Hill, sole owner of Pulp Bleaching Company since 1933, has now associated with himself in the ownership George Gunn, Jr., President of Webster-Brinkley Co., Seattle, and Thomas J. Bannan, Vice-President of Webster-Brinkley Co. and Executive Vice-President of Western Gear Works, Seattle and Los Angeles, Pacific Gear & Tool Works, San Francisco, and Pacific Gear Works, Los Angeles.

When we have won the war, Webster-Brinkley Co. will manufacture for Pulp Bleaching its expanded line of process equipment. For the duration, every effort will be made to supply necessary replacement parts to users of Pulp Bleaching equipment having adequate priority status.

Webster-Brinkley Co. has made an outstanding record in handling a number of tough, critical war jobs with impossibly short delivery schedules and has been awarded both the Maritime "M" and the Army-Navy "E". They were recently entrusted with the design of a special type of steering gear for combat ships not previously made in this country, and have made many other notable engineering contributions to the war program.

These combined resources, sharpened and toughened by our war effort, will be available to the pulp industry when Peace comes. Perhaps, you have a problem you would like to have us begin thinking about, even though its execution may have to go on the waiting list.

PULP BLEACHING COMPANY

651 Alaska Street • Seattle, Washington

MAIL ADDRESS: P. O. BOX 3127

APPA Announces Three 1943 Objectives

● In its 1943 annual report of activities, the American Paper and Pulp Association announced these objectives, as outlined by its Executive Committee and Board of Governors:

1. To assist the industry in the formation of a sound and modern labor relations program.

2. To make available statistical facts and information indicating industry trends for the guidance of management.

3. To inform the industry respecting legislation and public requirements; to advise the industry with respect to public affairs affecting it; to facilitate industry cooperation with public agencies in matters affecting the public interests and public objectives; and to foster the scientific advancement of the industry through research and the dissemination of factual information relating thereto.

Stressing the importance of point 1, the report stated that about 150,000 wage earners are employed by the primary pulp and paper industry of which about 66 per cent are organized.

Other statistics: Employes and their direct and indirect dependents total 1,100,000 persons. Eighty-three per cent of the mills are in communities under 50,000 population. Twenty-eight per cent are in 152 communities which are 70 to 100 per cent dependent on them.

The industry used 5.4 per cent of total estimated carloadings for 1942. Received 74,684,655 tons, (1,785,442 cars). Shipped 14,414,355 tons (583,469 cars).

Priority Assistance

● Industry statistics for WPB, OPA, ODT, Agriculture Department, Bureau of Labor Statistics and other agencies have added to work of the Association's statisticians. Weekly, monthly and quarterly reports on paper production and orders received, shipments and stocks on hand, pulpwood consumption and inventories, operating ratios and considerable other data of like nature are being reported regularly to these agencies by the Association.

In serving the industry in its relations with the government, the Washington office of the A. P. P. A. handled almost 1,000 applications for priority assistance to pulp and paper mills in 1942. Nearly 2,000 letters containing specific information were exchanged between the Washington office and particular mills. There were 1700 phone calls in connection with this work. An average of 58 mills per month used the Washington facilities.

The Association's Industrial Relations Committee made two attempts to have the industry exempted from provisions of Executive Order 9240 relating to overtime pay but both were denied, after which the A. P. P. A. devoted its efforts to aiding the industry in effecting the order.

Army Men Return to Mill

● Two men, Cecil Conner, precipitator operator in the kraft mill, and J. L. Hays, bag factory inspector in the technical department, are returning to the Camas mill of the Crown Zellerbach Corporation from the army. These men are over the 38-year age limit and are considered more essential to the war effort in their former positions in the pulp and paper industry.

Government Printing Office Using 33 Cars of Paper Daily

● The Government Printing Office in Washington and its jobbers are consuming paper at the rate of 33 carloads per day, according to a report by The Wall Street Journal. This large tonnage is used in printing orders placed by government agencies and for the Congressional Record (40,000 copies) and the Federal Register, which records government orders, edicts and amendments thereto (35,000 copies).

(Since publication of these figures by the Wall Street Journal, the Office of War Information announced the elimination of 42,317,000 copies of informational publications and press releases. Of this amount, 7,789 were press releases. Previously it had been announced that peace-time informational publications had been cut 20 per cent to make way for increases in publications necessitated by the war.

How much these reductions would affect printing shop business of the government was not explained.)

The wartime upsurge in the government's printing business is a boon to a large segment of the nation's 20,000 private printing shops. Some 3,500 of these private shops are sharing in the overflow from the GPO. They are handling about two-thirds, or $40 million, of the $60 million business which the GPO is doing this year. This makes up for a large part of the war induced losses in their normal trade.

Notable among the orders being farmed out is a contract for 150 million copies of war ration book No. 2. This work is being let to 30 printing houses, the only ones which could be found with the proper facilities. A total of 15 million pounds of special safety (anti-counterfeiting) paper will be consumed on this contract, enough paper to band the middle of the earth twice at the center with a 25-inch strip (50,000 miles).

The GPO's 202 Presses—rotary and flatbed—fill two acres of the plant's 32 acres of floor space. Included among these presses (the largest is a 62-inch flatbed model) are all types: Vertical, Simplex, perfector and offset. The offset can flip out a half-million pamphlets any night.

To feed these presses, the plant has a tremendous warehouse. Its size can be gathered from the fact it can accommodate 16 full-size freight cars at one time.

The printing office has 8,000 employes now, against 7,500 before the war, a modest increase considering the jump in its work. The war has dealt a hard blow to experienced personnel, putting 1,065 men in uniform and taking so many out of the apprentice school that it has been forced to close.

Through the plant is handled all government printing, except stamps, currency, bonds and certificates, which are printed by the Government's Bureau of Printing & Engraving. Certain types of field printing, that is, material relating to a particular region, is done outside the GPO.

Commercial Shops Helping Out

● In 1939, Public Printer A. E. Giegengack, the No. 1 man at the Government Printing Office, made a survey of the nation's 20,000 printing shops, selected 3,500 as being of the type that could handle government work. Small shops generally are not considered for contracts because the government orders usually are large and can't be broken down too small without jumping costs excessively, GPO men say.

Last year, the GPO spread 7,357 orders among 548 contracts in 199 cities. These contracts were worth $18,200,423, but would approach $30,000,000 if they included the costs of paper and plates which are supplied by the government. During this fiscal year, it is estimated that virtually all of the 3,500 plants on the GPO's "approved list" will share in the $40,000,000 business that will be let out.

Government printing contracts usually are let on a bid basis. However, some pre-priced contracts are made to expedite work. Pre-pricing involves estimates on a particular job from both jobbers and the GPO. After studying these, the GPO sets the price for the job and selects, on a rotating award basis, the houses which agree to accept the prices so fixed.

War Ration Book No. 2

● The rationing coupon work is being spread around the country by GPO. Formerly, most contracts for government printing went to houses near Washington. However, the government's general policy of decentralization is being applied to printing, with shipment of finished work being made directly to field offices. Now, the chief recipients of federal printing contracts are Chicago and New York shops.

War Ration Book No. 2, involving 150 million copies, is the biggest job ever approached by the GPO. But if the OPA had its way, it would be much bigger. It wanted the book to be four times the size finally agreed on—16 pages of 192 stamps. (This is a fair indication that the OPA has sweeping rationing plans in its head.)

The perforations on the coupon sheets which make possible the tearing out of individual coupons looks simple enough, but they are the chief reason why so few shops were found able to produce War Ration Book No. 2. There aren't many presses in the country set up for this particular type of work.

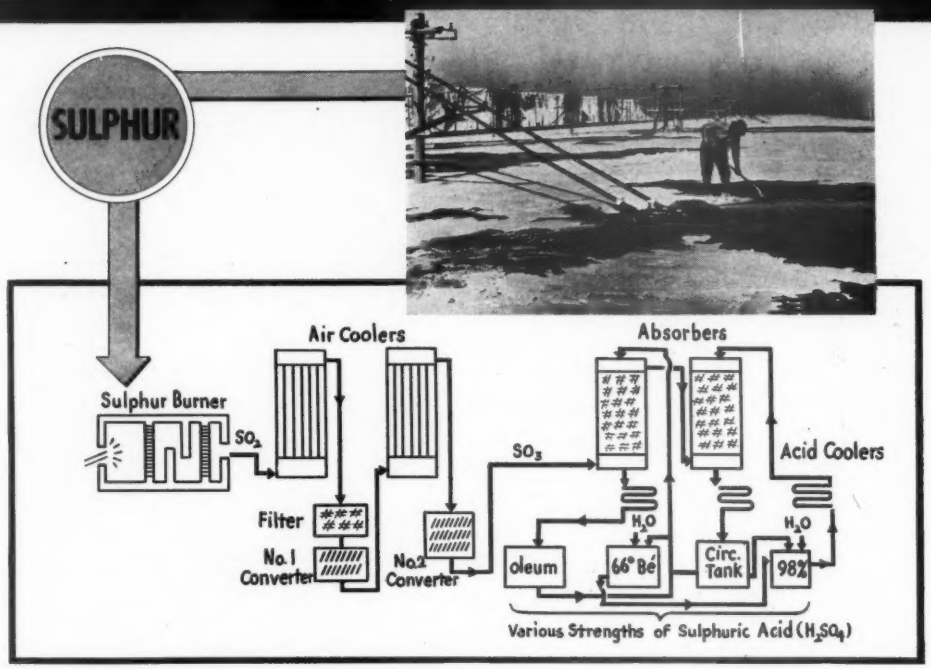
The use of special "safety" paper and the printing of the ration books in two colors also represent a problem for printers. The "safety" paper, which is a development of the GPO is counterfeit-proof, the government contends.

Midwest Ceilings Upped

● Balsam, pine, hemlock and poplar pulpwood ceiling prices in Wisconsin, Michigan and Minnesota have been raised by the Office of Price Administration. This also applies to pulpwood produced elsewhere in the United States and sold in those three states.

The increases were a $1.50 raise to $8 a cord for rough 55-in. poplar, a $1.50 raise to $9.50 for rough jack-pine, a $1 raise to $12 for balsam, a 50 cent raise to $11.50 for peeled or rossed hemlock, and $1 raises to $11.50 and $10 respectively for 55-in. and 100-in. poplar.

HOW SULPHUR SERVES INDUSTRY



SULPHURIC ACID

{Contact Process}

Sulphur is burned to sulphur dioxide (SO_2). This is cooled, filtered, and passed to a converter. Here a catalyst causes the sulphur dioxide to take on an atom of oxygen to form sulphur trioxide (SO_3). Sulphur trioxide then compounds with water into sulphuric acid (H_2SO_4).

Sulphuric acid is used in the preparation of so many products—fertilizer, rayon, steel, textiles, etc.—that it has been called the "pig iron" of the chemical industry. Its consumption is the yardstick often used to gauge the volume of industrial activity. It is easily and economically made from Sulphur produced by Texas Gulf because it is 99½% pure and free from arsenic, selenium and tellurium.

Sulphuric acid is of vital importance to American industry. To the acid manufacturer, a dependable source of Sulphur is of equal importance. Texas Gulf Sulphur Company has above ground ready for shipment more than a year's supply for the entire nation. This, together with large underground reserves and efficient mining methods, is assurance of an unfailing supply.

TEXAS GULF SULPHUR CO.
75 E. 45th Street New York City
Mines: Newgulf and Long Point, Texas

Fiber Drums Now Carrying Chemicals

● Shortages of steel drums, tin cans and other metal containers have created difficult problems in the packaging of all sorts of products, from talcum powder and toothpaste to black powder and cyanide, says the Dupont company.

Chemicals are first line war materials and it is very important that there be no interruptions in their flow to the ordnance plants, the steel mills which require certain of them to harden the steel, the textile mills and other war production centers. The packaging problem is doubly difficult because chemicals may be explosive, flammable, poisonous, corrosive, or all four. Nor can they be permitted to become diluted or contaminated. Thus the package must be safe from the action of the contents and the contents must be protected from contamination by the package.

More than a year ago the Du Pont Company, realizing the need of packaging substitutions, began to plan for them. A packaging consultant was recalled from retirement, purchasing department men began to scour the country for packages that would fit the varied products of the industry, and plant men were assigned to the job.

Fiber drums have received first call as an alternate container for a great many chemical products. The demand for them far exceeds the supply. Some are waterproofed or otherwise improved as to impermeability by plastic coatings, acid-resistant paints, asphalt, paraffin, and other materials. Latex, formerly used for linings, is unavailable due to the rubber shortage.

Among the chemicals for which steel can no longer be spared is cyanide, itself an essential in the heat treatment of steels for war. Cyanide is being safely shipped in fiber drums. Dry dyestuffs, arsenate of lead and various insecticide powders have shifted from steel drums and cans to fiber containers. Some of the dry colors in small quantities are going into the familiar cylindrical fiber ice-cream containers.

Black powder, for blasting and for certain military purposes, is soon to go from the familiar steel powder keg into a special keg made of pulpboard which has been water-proofed to meet requirements prescribed by the Du Pont packaging consultant.

Wooden slack barrels seem to be another alternative for steel drums for dry products, but they may run into the steel shortage by way of their metal hoops. DNT (di-nitro-toluene), now in slack barrels, may eventually go into fiber drums.

With burlap in tremendous demand and all stocks frozen by the government, the chemical industry has turned to more available substitutes—bags made of cotton sheeting or osnaburg (a strong plain-weave cotton fabric). The cotton bags sometimes require a liner of crinkled kraft paper, which is applied to the fabric with a water-proofing agent.

Multi-walled kraft paper bags, with an asphalt layer or other variations designed to meet the peculiar requirements of the product, are also being used in increasing numbers by the chemical industry. Crystal urea, for example, formerly packed in burlap bags lined with latex-coated white paper, is now in a multi-walled paper bag.

Paints and solvents have been exceedingly hard hit. The shortage first affected the smaller cans. Most of the fractional pint sizes are no longer being shipped at all. Other sizes under a gallon are going into glass jars.

The intermediate packages, from one to 50 gallons, are in a very difficult situation, although wood may eventually carry them through. Some cooperage capacity regularly serving the dairy trade has been diverted to making butter-tub types of containers for paint products. And there may be more relief for 50-gallon quantities in the form of heavy oak barrels, although the adequacy of this supply is yet to be determined.

If the container problems are successfully solved, sufficient, if not abundant, supplies of paint may be available for 1943.

For the shipping of sulfuric, nitric and muriatic acid, glass carboys and tank cars are still doing the work.

The packaging situation for the chemical industry changes almost day to day, but chemists and engineers are using every expedient and resource available to keep ahead of shortages and to insure deliveries.

Permit Is Granted For Export of B. C. Chips

● International Pulpwood Supply Company has been given permission by order of the British Columbia government to export from Alberni Canal 7,500 units of chipped wood and hogged fuel to the United States.

It is stipulated that the material must be from mill waste and that a unit is not to exceed 200 cubic feet.

Evenden Makes Rounds Of Pulp and Paper Mills

● Robert M. Evenden has joined the editorial staff of PACIFIC PULP AND PAPER INDUSTRY. Mr. Evenden recently resigned as assistant professor of wood products, Oregon State College, Eugene, Ore., in order to take over the post of associate editor of this magazine and its affiliated monthly publication, WEST COAST LUMBERMAN.

His office is 1220 S. W. Morrison St. (Phone: Atwater 8890), Portland, Ore. He is covering Oregon and Southwestern Washington for the two publications.

Born in McMinnville, Ore., in 1906, he was educated in schools of Warrenton, Ore., where he moved at the age of two, and in Oregon State College, where he was granted bachelor of science and master of science degrees. He was married in 1931 to Tyra Corinne Rylander and they have one son, Jerry, born in 1935.

Mr. Evenden was employed by Potlatch Forests, Inc., Lewiston, Idaho, for five years, successively holding positions in the dry kilns, in the efficiency and industrial engineering department and finally as personnel manager. He joined the Oregon State College forestry school staff in 1937. Last summer he taught safety engineering to about 80 Crown Zellerbach key logging men. He is a member of the American Society of Safety Engineers. His hobbies are photography and woodworking.

Bureau of Standards Tests Bleached Groundwood

High-grade groundwood pulp, such as produced for the manufacture of book and writing papers, is sometimes bleached by processes recently developed with which it is possible to effect considerable improvement in color. Unbleached groundwod papers rapidly become yellowed and brittle when exposed to light because of the high content of lignin, and it is of interest to know whether papers made of the bleached groundwood have better stability in this respect. A test of this has been made at the National Bureau of Standards. The papers were composed of 70 per cent groundwood pulp and the balance sulphite pulp. The groundwood pulp of one paper was bleached by the sodium peroxide process and that of the other paper unbleached, otherwise being of the same grade. The papers were exposed to carbon-arc light for 8 hours on each side, under identical conditions, then were examined for degree of yellowing and tested for loss of alpha cellulose. The latter is a good measure of degree of deterioration of papers. While both papers showed considerable yellow, the paper containing bleached groundwood pulp yellowed to a lesser degree. Also, the decrease in alpha cellulose percentage was 19.4 as compared with 32.4 for the paper containing unbleached groundwood. A comparable figure for paper made of alpha pulp, a highly refined wood pulp, is 1.8. These results indicate that while this bleached groundwod pulp cannot be regarded as being very stable to light, it is more stable than the unbleached pulp.

Develop New Test For Asphalted Papers

● The National Bureau of Standards recently completed tests of asphalted kraft wrapping papers to secure data for revision of the Federal Specification for such papers. The information on testing methods secured in this work is of particular interest at this time because of the considerable attention being given to moisture-resistant wrappers used for the protection of materials shipped overseas.

The samples tested comprised practically all types of the asphalted papers available, of which there is a great variety.

In testing for water resistance, both of the TAPPI methods, the ground-glass method and the dry-indicator method, were used. It was found that the ground-glass method, that is at present specified in the Federal Specification, is unsuitable for the present types of paper as it did not differentiate between them satisfactorily. By this method of test, most of the various types were indicated as being practically waterproof, which when tested by the dry-indicator method the time of permeation of water varied greatly—from as little as 2 hours up to practically no permeation, that is, over 100 hours. Moreover, the latter values were in accord with those to be expected from the construction of the papers. For these reasons, values obtained by the dry-indicator test are specified in the present Emergency Alternate Federal Specification for asphalted wrapping papers and are contained in a revision of the basic specification now under consideration.

The papers were also tested for water-vapor permeability according to the desiccant procedure of the TAPPI method, in an exterior atmosphere as therein specified of 50% relative humidity and 23° C. There was good correlation between these values and the water resistance values obtained by the dry-indicator method. This is to be expected for highly impermeable papers, because when water is applied to them the moisture probably diffuses through continuously in the form of water vapor.

The testing indicated that the dry-indicator method and the water-vapor method both need revision to suit them for testing highly resistant papers and TAPPI has this under way.

Dard Hunter's Latest Book Is Papermaking History

The results of 35 years of study and world-wide researches in the art of papermaking since its invention in China in 105 A. D. have gone into "Papermaking —The History and Technique of an Ancient Craft," by Dard Hunter

This 400-page volume, published by Alfred A. Knopf, puts into easily accessible and permanent form a great deal of information which pulp and paper makers previously have run across in scattered fashion, and in addition, comments on the author's personal investigations.

The book contains a frontispiece map which traces the journey of papermaking from China to Europe and then to America, with an offshoot to Japan; and a chronology of 60-odd pages based upon Munsell, ranging from 2700 B. C. to 1942 A. D.

The price is $4.50. Orders may be sent to the News Print Service Bureau, 342 Madison Avenue, New York, N. Y.

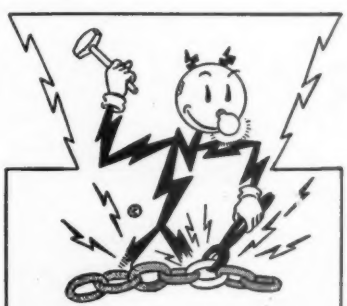
Paper Milk Containers Make Good Kindling

Paper milk containers have been steadily winning converts. Perhaps none more devoted than a person who has been cut by a broken milk bottle.

The U. S. Army must like the paper-containers, too, for it is sending milk from Minnesota to posts and training fields in Florida in quart Pure-Pak containers—9,000 to a train car. Reason: a Florida milk shortage. The containers pack neatly in the refrigerator cars and the milk is in excellent condition after traversing the country through radical changes in climate.

The Pure-Pak division of Ex-cello-o Corporation now comes forth with another wartime reason for using paper milk containers. It points out that with less wood available these days, householders will find that the Pure-Pak containers make fine kindling. Two are enough to start a fireplace fire; only a few are needed to do the job in a furnace. Dry paper under them will help. The virgin wood fiber and pure paraffin in the containers burn with what might be described as real enthusiasm.

How to store used paper milk containers in a neat pile for use as kindling: Cut the top off. Give the container a quick rinse under the faucet. Cut the bottom off on three sides. Then just flatten the container. Add the cut-off tops to the pile. Nothing wasted—such conservation of materials is what helps win the war.



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PUGET SOUND POWER & LIGHT COMPANY

Simonds Saw Awarded "E" Pennant

● Presentation of the Army-Navy "E" pennant by Brig. Gen. Burton O. Lewis, U. S. A., Boston Ordnance District, highlighted the program February 9 when the employees of the two Simonds Fitchburg plants received the Army-Navy "E" Award for high efficiency in War Production. The pennant was accepted for the Simonds Saw and Steel Company by Gifford K. Simonds, Jr., general manager.

Captain Gordon C. Hall, U.S.N.R., presented the Army-Navy "E" insignia pins. Theodore T. Carlson, president of the Simonds Employees Aid and Benefit Association, accepted the pins on behalf of the employees. Nearly 2000 employees from the armor plate and the saw and file factories gathered with their guests for the ceremony in the Simonds controlled conditions plant at Fitchburg, Massachusetts. Major Daniel Simonds, president of the company, now on leave to serve with the U. S. A. First Service Command, commended the employees on winning this high honor. Among the guests of honor were Leverett Saltonstall, governor of the Commonwealth, and Alfred Woolacott, mayor of the city.

Dupont Issues Bulletin On Polyvinyl Alcohol Coatings

● A new technical bulletin, "Increasing Water Resistance of Polyvinyl Alcohol Coatings," has been issued by the Electro-chemicals Department of E. I. du Pont de Nemours & Company, manufacturer of this tough plastic which is gas and vapor-proof, and resistant to grease and most organic solvents.

Methods are described for reducing the water sensitivity of the polyvinyl alcohol coatings after they have been deposited from water solution through the use of water-soluble thermosetting resins, drying oils, and certain chromium compounds.

For example, films or coatings of polyvinyl alcohol which have been dipped in a drying oil and then dried, preferably at elevated temperature, show a substantial increase in water resistance. Linseed oil, chinawood oil, oiticica oil, dehydrated castor oil, and certain synthetic drying oils have been found useful, but the rate of reaction and uniformity of the coating vary considerably with the different oils. The best results have been obtained with chinawood, oiticica, and linseed oils, the former two requiring only about one hour to dry at 105° C., linseed oil requiring five hours or more.

Drying can be accelerated by the addition of 0.1% to 1% of a cobalt drier, but careful regulation of the amount and the drying conditions is required to avoid "orange peel" effects. If preferred, the drying oils can be added directly to the polyvinyl alcohol solution from which the coating or film is applied. The increased water resistance is apparently not merely a surface effect, since unusual swelling does not occur at the freshly cut edges of the film. Moreover, samples coated with boiled linseed oil, for example, retain their water resistance even after immersion in paint solvents, such as a mixture of acetone, methanol, and benzene.

Copies of the bulletin may be secured by writing to the Electrochemicals Department, E. I. du Pont de Nemours & Company, Wilmington, Delaware.

Civilian Packaging To Be Drastically Curtailed

● American civilians will for the duration largely do without a mounting list of consumer goods such as cellophane, plastics, asphalt, wood and wood pulp products in order that delicate equipment may be shipped safely to their fighting men throughout the world, according to an article appearing in Victory Magazine published by the Office of War Information.

Although intensive efforts are being made to devise substitute containers and packaging of plastics and wood-fiber, practically all materials used in commercial packaging will become scarce. Only materials absolutely essential to the sanitation and preservation of consumer goods will be allocated to civilian use. Such materials, heretofore used for purely decorative and display purposes will disappear.

Seeing that equipment reaches American troops overseas in prime condition is the job of the Packing and Packaging Section, Conservation Branch, Production Division, of the U. S. Army Services of Supply. A similar service branch operates for the Navy, in cooperation with the Army and the various war agencies.

According to an official War Department spokesman, "To use any more material or space than is essential to do the job, or any less, would result in our invaluable military supplies arriving at their destinations either reduced in quantity or sabotaged by damage.

"The present transportation hazards of our globe-encircling supply lines are beyond anything else previously experienced either in war or industry. Our ships must pass through every imaginable weather condition. Severe temperature changes are encountered. Condensation is a great problem. The corrosive effects of salt-laden air are encountered all over the globe, and the drenching humidity of the jungle can be as much a handicap to an operation as the Axis powers. The problem is a gigantic one, and one that takes the concerted effort of every packaging engineer and distribution expert in our land."

Proper packaging requires that many materials until recently untouched by the war effort must now go on the restricted list.

For example, airplane engines, automotive equipment, and machine guns have to be packaged in moisture-proof containers. These containers may be pliofilm or cellophane. The cellophane must be laminated with other materials such as lead foil, wax, lacquer, asphalts and cotton scrim sheeting.

In addition, many types of equipment require grease-proof paper wrapping and water-proof fiber crates. Large quantities of various chemical compounds such as silica-gel, Stoddard's solvent, volcanic ash, and soaps are necessary for cleaning the equipment before it is hermetically sealed in its package and for keeping the package dehydrated until it reaches its destination. If so much as a fingerprint is left on a bearing or cylinder wall or the least moisture remains in the package, the metal surfaces will be etched with corrosion that may cause engine failure at a vital moment. Chemicals used in these processes will become almost unobtainable for other than wartime use.

The War Department states that packaging experts are devising every possible means for eliminating the use of metal containers. The metal shortage is so acute that fiber containers for lubricating oils have come into general use by both Army and Navy.

The already critical shortage in lumber and wood products will necessarily be heightened by the growing need for packaging war materials. Highway systems may go without repairs because stocks of asphalt may be preempted for waterproofing kraft paper containers.

However, War Department officials point out that the present deprivation of packaging materials that civilians must undergo has a brighter side: "The packaging industry has grown to a point never before attained, in some cases never thought attainable. Before 1942 few people would even have dreamed that paper board boxes could withstand twenty-four hours immersion in water and continue to protect the contents. Much greater use of lumber resources, much more efficient use of transportation facilities to conserve materials and use less shipping space will be gained for peacetime. This war has seen packaging emerge from the status of a trade into the category of a science."

Edison Battery Change In Name

● As of March 1st the name of the Edison Storage Battery Supply Company was changed to Thomas A. Edison, Inc., Edison Storage Battery Division. The only change was in the name.

The Pacific Northwest is in charge of F. C. Gibson as Northwest Manager, and headquarters are at 71 Columbia Street, Seattle.

Edison alkaline storage batteries are widely used in the pulp and paper industry to power electric lift trucks.

New B. C. Bonds Listed As Non-Taxable Income

● British Columbia Pulp & Paper Company is now issuing additional bonds to holders of the general mortgage 7 per cent bonds as settlement in part of interest arrears, and these bonds will not constitute taxable income in the hands of bondholders.

A ruling to that effect has been made by the Canadian tax department in consideration of the fact that the interest which accrued in loss years and is being capitalized was not used as a deduction for income tax purposes by the company.

Holders of the general mortgage bonds at a meeting in Montreal recently gave unanimous approval to the plan whereby $430,917 will be paid in cash within the next year and new bonds will be issued to the amount of $489,400.

For each $1,000 bond the holder will receive: $400 principal amount of new 7 per cent bonds, $352.20 in cash (Canadian funds) of which $180 will be paid in 1942 and $172.20 in 1943.

In view of the importance of conserving working capital at an adequate figure, the company arranged for a two-year loan of $1,000,000 secured by treasury first mortgage bonds.

Robert E. Harris Dies

Robert E. Harris, employed in the wood department of the Puget Sound Pulp and Timber Company, died suddenly at his home in Ferndale, Wash., on April 9th. Mr. Harris was active in the Elks and Modern Woodmen lodges.

Australian Newsprint Usage Curtailed

● Australian newspaper publishers, who used to depend almost entirely on North American and Swedish sources for their newsprint, are apparently well satisfied with the administration of supplies being carried out by Ian Macdonald, manager of Newspaper Supplies Pty. Ltd., for the Australian Newspaper Publishers Association.

British Columbia pulp mills are still shipping a certain amount of sulphite pulp to Australia to combine with pulp produced at the new Tasmanian mill.

According to the Canadian trade department, Mr. Macdonald explained at a recent conference of Australian publishers that 1500 tons of sheet newsprint are required annually. Probably one ship a year from overseas would be sufficient to bring in supplies for newspapers requiring flat sheets, and permission has been granted for the importation of minimum requirements.

Efforts were being made to secure shipping space for this newsprint, but it was likely that some months would elapse before such supplies came to hand. Meanwhile his company had arranged for the waste newsprint from daily papers to be made available to assist users of sheet newsprint. The supply from this source, however, was very limited and it was likely that, when necessary to meet requirements, some reel newsprint would be converted to sheets.

As regards the newsprint position generally, the future was entirely dependent on the shipping position. After the first quarter of 1944 the only available newsprint in Australia would be that from the Tasmanian mills, representing approximately a third of requirements on the present consumption basis from oversea, over and above the Tasmanian production. To meet Australia's needs would call for almost the entire space of one 8,000-ton ship monthly.

The Tasmanian mill was not at present equipped to supply sheet newsprint. This would involve the building of a machine, which would take some time. Asked whether newsprint would be supplied from the pool for jobbing purposes, Mr. Macdonald said in his opinion newsprint should be supplied only for the publication of newspapers. He thought there would be strong opposition to any suggestion of supplying newsprint for purposes other than the production of newspapers.

Wallace Joins Board Mill

● A. M. Wallace has been employed by Pacific Paper Board Company at Longview, Wash., to take charge of their waste paper salvage traffic. Mr. Wallace is well known in this community, having been employed by the Pulp Division of the Weyerhaeuser Timber Company. He has been released to the industry from the army.

Camas Men Retire

● Marvin Fountain and Clyde Lester, long time employees of the Crown Zellerbach mill at Camas, Wash., have retired this month, under the retirement plan of that organization.

Mr. Fountain was for 23 years a watchman at the plant and Mr. Lester was dam tender at Lackamas lake for 18 years.

Cellulose Nitrate In the War

● Oldest of all the fabulous plastics and a tried veteran of World War I, cellulose nitrate is back in uniform in this war, the Plastics Department of E. I. du Pont de Nemours & Company reports.

Made first by Hyatt in 1869 as a new hard material for billiard balls, cellulose nitrate plastic today is one of three essentials of modern war manufactured from the same base—nitrocellulose.

Cellulose from cotton linters or woodpulp, nitrated with a mixture of nitric and sulphuric acids, gives nitrocellulose. By varying the degree of nitration and the ingredients subsequently added, chemists derive smokeless powder, plastics or lacquers.

Smokeless powder is a military propellant. Cellulose nitrate plastics are used for transparent enclosures of trainer planes, auxiliary primers for munitions and a host of things military. Nitrocellulose lacquers protect ammunition, planes and tanks against sea water, sun and weather.

Cellulose nitrate was the first transparent plastic used for enclosures on military airplanes. Today "Pyralin" cellulose nitrate and similar plastics are in demand for airplane mileage indicators, parts of binoculars, containers in soldiers' toilet kits, fittings on soldiers' bags, goggle frames, grommets for control cables on airplanes, and military map containers.

Airplane knobs and handles, heads of metal working hammers, motorcycle windshields, navigation guides, photograph holders for military bases, parts of range finders, vaccination shields and a number of confidential parts are other war applications.

Very little cellulose nitrate plastic is available for such well-known peace-time uses as fountain pens, toothbrush handles, piano keys, dominoes, spectacle frames, shoelace tips, toys, watch crystals, woodheel coverings, cutlery handles, eye shades, pencils, rulers and oil pipe line coverings.

Decline In Canadian Overseas News Shipments

● The extent to which shipping problems and government restrictions on newsprint use is affecting Canadian production is revealed in figures issued for the January period. Considered with plans for further curtailment in the United States newsprint consumption, they give a picture of operating rate indicated for the current year.

While sales of Canadian newsprint overseas had previously dropped to relatively low levels, the latest figures indicate further contraction in such shipments. Shipments from Canada to overseas customers in January were 41.1 per cent below year before, and amounted to only 9,904 tons. In January, 1939, Canadian newsprint shipments overseas were 26,330 tons.

Even further curtailment in overseas newsprint use appears in sight as result of tight cargo space situation. Effective this week, British newspapers have been ordered to use lighter weight paper. Total curtailment of newsprint use in Britain now amounts to 80 per cent. Advertising space used in Britain is 40 per cent to 45 per cent below prewar levels, but advertising rates are up 20 per cent to 40 per cent.

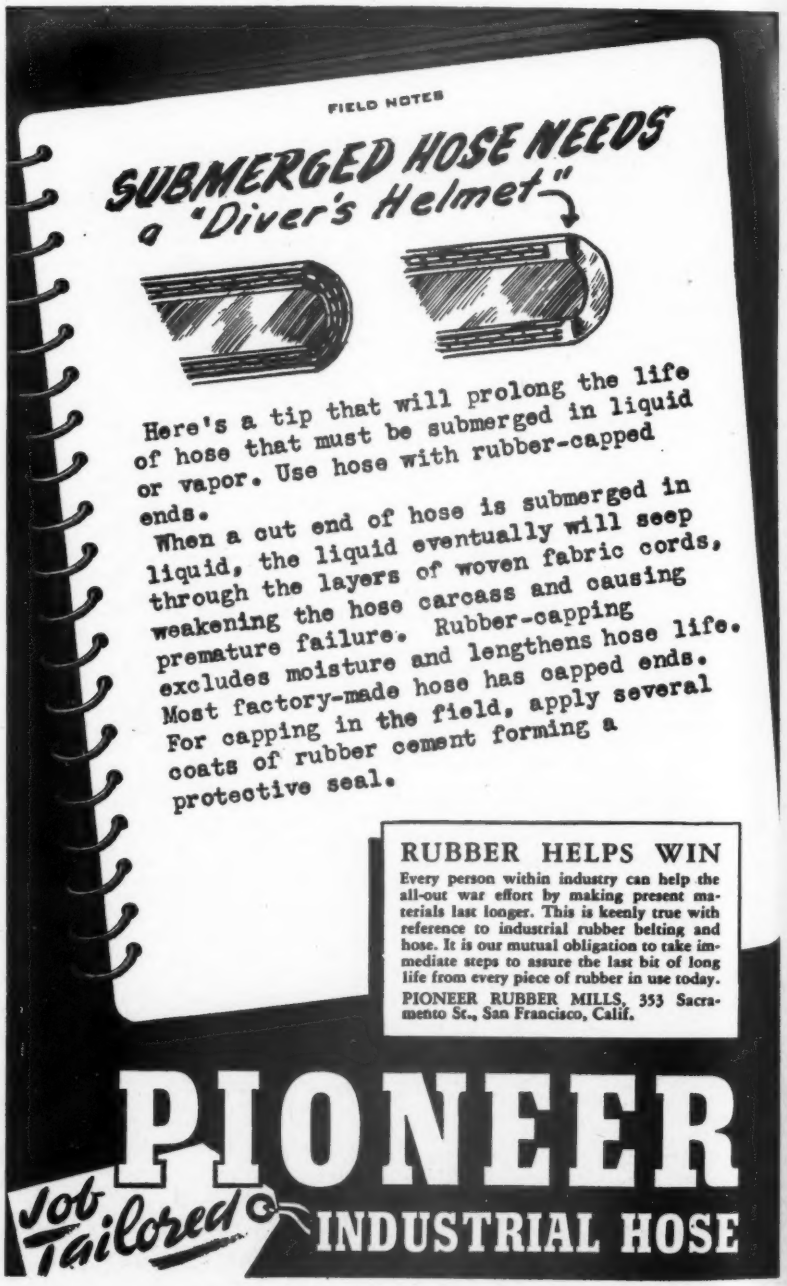
Newfoundland Exports

The shipping problem has prevented Newfoundland mills, which do not come under the control of the U. S. and Canadian governments, from getting a larger share of the important U. S. market. In January, Newfoundland shipments were down more than 47 per cent from year before. Newfoundland shipments to the United States fell 40.5 per cent, while shipments overseas declined no less than 71.7 per cent.

Canadian shipments to the United States customers, in contrast, were off only 26.3 per cent below year before. U. S. shipments to the domestic market were down 13.7 per cent.

The decline in Canadian shipments, moreover, was more drastic than the drop in consumption. This was due to the fact that the latest U. S. government orders have prohibited publishers from stocking up, and forced them to use up excess stocks that they had built up for emergency.

Apparent total consumption of newsprint in the U. S. in January was only 2.3 per cent below January, 1942, whereas in December the decline from year before was 7.2 per cent. The decline will widen later, but is unlikely to be as severe as some had anticipated, because of the exemption, from the 10 per cent cut ruling, of smaller newspapers.


FIELD NOTES
SUBMERGED HOSE NEEDS a "Diver's Helmet"
Here's a tip that will prolong the life of hose that must be submerged in liquid or vapor. Use hose with rubber-capped ends.
When a cut end of hose is submerged in liquid, the liquid eventually will seep through the layers of woven fabric cords, weakening the hose carcass and causing premature failure. Rubber-capping excludes moisture and lengthens hose life. Most factory-made hose has capped ends. For capping in the field, apply several coats of rubber cement forming a protective seal.
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Every person within industry can help the all-out war effort by making present materials last longer. This is keenly true with reference to industrial rubber belting and hose. It is our mutual obligation to take immediate steps to assure the last bit of long life from every piece of rubber in use today.
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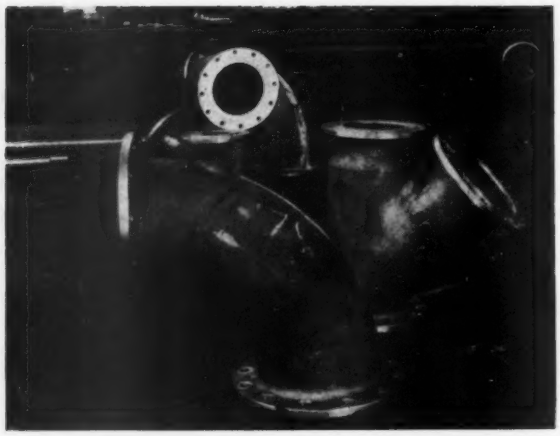

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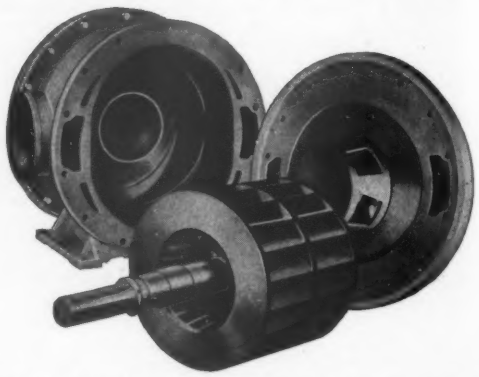

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INDEX OF ADVERTISERS

A
Alaskan Copper Works 55
American Cyanamid & Chemical Corp. 29
American Rubber Mfg. Co. 50
Appleton Wire Works 55
Appleton Woolen Mills 54

B
Bagley & Sewall Co. 54
Black Clawson Co. Divisions: Shartle Bros., Dilts Machine Works ..... Inside Front Cover
Bulkley, Dunton Pulp Co. 2

C
Cameron Machine Co. 50
Chemipulp Process, Inc. 53
Chromium Corp. of America 55

E
Eastwood-Nealley Corp. 45
Edison Storage Battery Division 54
Electric Steel Foundry Co. 56

F
Ferguson & Co., Hardy S. 55
Fitchburg Screen Plate Co., Inc. 50
Freeport Sulphur Co. 53

G
Great Western Division, The Dow Chemical Co. 38

H
Hardy, George F. 55
Hesse-Erstad Iron Works 40
Hooker Electrochemical Co. 51
Huyck & Sons Co., F. C. 1

I
Instrument Laboratory, Inc. 54

J
Johnson Corporation, The 54

L
Lockport Felt Co. 49

M
Marshall & Barr 55
McMaster, Leonard 52
Merrick Scale Mfg. Co. 54
Monsanto Chemical Co. 54

N
National Aniline Division, Allied Chemical & Dye Corp. 52
Nash Engineering Co. 56
Northwest Filter Co. 54

O
Orr Felt & Blanket Co. 53

P
Pacific Coast Supply Co. 49
Pacific Gear Works ..... Outside Back Cover
Pacific Gear & Tool Works ..... Outside Back Cover
Perkins-Goodwin Co. 55
Pioneer Rubber Mills 48
Puget Sound Power & Light Co. 46
Pulp Bleaching Co. 42
Pusey & Jones Corp. 55

R
Rayonier Incorporated 27
Ross Engineering Corporation, J. O. 54

S
Schoenwerk, O. C. 55
Shuler & Benninghofen 51
Simonds Saw & Steel Co. 56
Soundview Pulp Co. ..... Inside Back Cover
Stetson Ross Machine Co. 55

T
Texas Gulf Sulphur Co. 44

W
Waterbury & Sons Co. 54
Western Gear Works ..... Outside Back Cover
Western Precipitation Corp. 52
Weyerhaeuser Timber Co. 54